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EDITORIAL NOTE

The present volume of the Indian Museum Bulletin incorporates papers contributed to various seminars organised by the Indian Museum in the past few years and also some articles concerning varied collections of the Archaeology, Anthropology, Botany and Zoology sections. Besides, the texts of two Dr. Nathaniel Wallich Memorial Lectures (instituted by the Museum to cherish the memory of its founder-curator) delivered by Prof. R. S. Sharma and Dr. P. Banerjee on 'Metal money in India' and 'Cultural contacts between India and Central Asia', respectively have also been included in this volume. We have tried to enrich this number of the Bulletin with some interesting papers received from the scholars in China and Japan. One of which deals with the Chinese inscriptions preserved in the Indian Museum, the other tries to make a comparative study of the performing arts and the masks of India and Japan. There are a few articles on museum method as practised in the museums of this sub-continent.

We plan to revive the Book review columns from the forthcoming issue of the Bulletin, hence the authors and publishers are requested to please send two copies of their publications on the relevant subjects to this office.

March 1997

Indian Museum

Calcutta - 700 016

Shyamalkanti Chakravarti

Director in charge

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The review of the book review columns will be published in the next issue of the Bulletin.

Volume 2, No. 1, 1937

Shyamsundari Chakravarti
Director in charge
Indian Museum
Calcutta - 700 016
March 1937

METAL MONEY IN INDIA (c. 500 – c. 1000)

R. S. SHARMA

I. Problems of Quantification

LIKE lend-grant inscriptions coins have been used mainly to study political history and occasionally to study art and religion. We are so obsessed with problems of political history that the obvious relevance of coins to economic activities does not bother us much. It needs to be stressed that coins dramatically altered the nature of exchange and economic transactions, that once in use they contributed immensely to trade, and influenced the mode of taxation and established impersonal relations between consumers and sellers, and between the state and its employees. Far-flung areas with different levels of economic development were bound together in a network of exchange relations leading to social and cultural exchanges, not unoften cemented by political domination.

Trade and commerce existed even without the use of coins in the Bronze Age cultures. Of course in some cultures silver pieces were used, and their value was based on their weights. But the invention of standardised and state authorised metal money in the early Iron Age marked a revolution. It inaugurated the use of a medium of exchange in terms of which goods and commodities could be evaluated. Cattle and similar other media of exchange were perishable, but not the metal money. Metal coins could be easily added and subtracted. They could be easily transported, accumulated, and used in various kinds of payment for goods and services. Book-keeping became much easier, and money lending leading to debt bondage slavery became an important practice.

In India coins appeared in the fifth century B.C although a few scholars would prefer to mark its start in the fourth century B.C.¹ There is no doubt that a large number of punch-marked coins attributed to the fourth and third centuries B.C were used in Maurya times. The punch-marked coins which belonged to the national or the imperial series were certainly much larger in number than those which belonged to the local series. The Indian Institute for Numismatics Studies in Anjaneri (Nashik), which has collected photographs of coins from several museums spread all over the country, possesses photos of more than 14000 imperial coins in contrast to those of nearly 700 local coins.² This may be regarded as a safe indication of the actual position in the country. P. L. Gupta, who physically handled 30,000 punch-marked coins belonging to the period from the fifth to the second century B.C., speaks of their more than 550 types.³ If one type numbered 5000 coins, the total number would be about 27,50,000. This may not mean much in the context of 600,000 soldiers of the Mauryas, not to speak of the salaried officials and of the total population. We also cannot say that all these types of the punch-marked coins were prevalent in Maurya times.

Between 200 B.C. and A.D. 300 the dynasties of local and central Asian origin issued abundant coinage. Taken together with those issued by the tribal republics, guilds, towns, etc., and those received from the Roman empire, we notice a period of plentiful coinage. This can be inferred from the periodwise breakup of coins in the British Museum⁴ as well as from the collection of the photos of coins by the Indian Institute of Research in Numismatic Studies.⁵ The breakup of coin collections in Andhra Pradesh State Museum⁶ follows the same line. The punch-marked coins found in Bharat Kala

Museum and Patna Museum outnumber the coins found between the c. 200 B.C and c. A.D 300. However the number of those found in pre-Gupta times is more than those found in c. 300 – c. 500. The breakup of collection in Prince of Wales Museum of Western India also shows more coins belonging to the pre-Gupta period than to any other period in ancient times.⁷ Bombay Asiatic Society Museum⁸ and Maharashtra Directorate of Archaeology Museum are poor in the collections of pre-Gupta coins. It is obvious that the collections of all the museums need to be examined from this point of view.

The abundance of metal money in c.200 B.C – c. A.D 300 fits with the progress of handicrafts, long-distance trade, and urbanism, all evidenced by excavations and supplemented by inscriptional, Buddhist and classical sources. Roman precious-metal coins may have been used as bullion, but they were certainly received in return for commodities which Rome imported from India. Some western enthusiasts dispute the drain of gold from Rome,⁹ but the ban placed by the Roman authorities on Indian outlery cannot be disputed. The concept of the balance of trade may have been unknown to ancients,¹⁰ but the Roman coinage system undeniably depreciated and disintegrated during the late third and also in the fourth century.¹¹ Kusana gold coins issued in considerable numbers were certainly used in economic transactions, although those discovered east of the Indus do not number many. Kusana coppers however are found in large numbers, and many of them weigh in the range of 17 to 7 grams,¹² thus suggesting considerable purchasing capacity. Taken together with other coppers and also with the lead and potin coins issued by the Satavahanas and the Ksatrapas they indicate the prevalence of monetary economy in broader sectors of population. Significantly enough nearly 50,000 Satavahana coins are found in the Andhra Pradesh State Museum of Hyderabad alone.¹³ We cannot give a total number of Kusana coins found in different museums, but the Indian Institute of Research in Numismatics has photos of more than 14,000 coins,^{13a} and the files maintained in Lucknow Museum enable us to count over 6,000 coins;^{13b} these files also inform us of 7,000 Naga coins.^{13c} We have not taken account of collections in the museums of Pakistan. But even without information from these sources the trend towards a spurt in the use of coins is unmistakable. Taken together with the Satavahana and other coins of the period between 200 B.C and A.D 300, the total number comes to nearly 90,000. (provided most Naga coins are considered pre-Gupta). It is interesting to note that as many 30,000 terracotta moulds of Yaudheya coins have been found.¹⁴ We learn that more than 330,000 silver coins deposited in a hoard of about c. A.D 300 but belonging to the period c. 180 B.C – c. A.D 250 were found in Shaoxing country in Zhejiang province in China in 1978¹⁵. This shows a very high degree of monetization in c. 200 B.C – c. A.D 300 in China. So many coins have not been found so far in India in the corresponding period. But leaving aside the coins of Satavahans and Kusanas, we can count nearly 600 varieties of 'tribal' and dynastic coins in pre-Gupta times. Although this is not an exhaustive list it would mean as many types of dies/moulds. If one variety accounted for 5000 coins, the total number of coins would come to 30,00,000. Further, 20 types of city coins^{13e} could number 100,000. I have no idea of the number of Roman coins found in India although 129 finds/hoard of precious metal have been reported. All this could give an inkling of the monetary situation in past-Maurya times. At any right the find of the large hoard of and Chinese silver coins is significant, and perhaps this may tie up with the market trade of central Asia and India, but this is a matter to be explored.

Although the Gupta rulers issued the largest number of gold coins, their gold content, particularly after Skanda Gupta, was smaller in comparison with that of the Kusana coins. The Ksatrapa rulers of Gujarat issued a good many coins in the third and fourth centuries,¹⁶ and these coincide with a good part of the period when Gupta coins were issued. The Ksatrapa coins included lead, copper and silver.

To strengthen silver alloys only 8% of copper is required, but the Kṣatrapas used 14-18% of copper,¹⁷ which indicates very limited supply of silver. Silver coins were continued by the Guptas for some time after the conquest of Gujarat.

If we look at our tables, the bracket of only 200 years for the Gupta period, i.e. c. 300 – c.500 shows naturally more coins. We have given a separate bracket for the Gupta period because of the special importance attached to it. The date 500 has been deliberately chosen as the terminal point because gold coins register a sharp decline in number and purity after this date. But, if considered centurywise, even in a period of 200 years the number of coins so far found is much less than that found in c.200 B.C – c. A.D 300. Of course the number of the gold coins issued by the Gupta kings is larger than the Kuṣāṇa golds, but if we take count of Roman gold coins, found in the country, perhaps the two could be equally balanced. However, when compared with the number of coins belonging to c. 500 – c. 1000 the coins issued earlier by the Guptas and their contemporaries together with the Byzantine coins would be much larger. Even after substantial urban decline after the third century gold coins continued to be used in good numbers for two centuries. Thus was obviously done to disburse salaries in cash to high civil and military officers. In any ancient state the army and the state bureaucracy accounted for the major financial expenditure.

During c.500 and c.1000 a good number of powerful dynasties ruled in almost all part of the country. The earlier periods cannot boast of so many kingdoms. The Gupta tradition of coinage continued in a depleted state in northern, central and eastern India, and also in the Andhra coast, till c. A.D 650, after which dynastic coins suffered drastic reduction. The Indian dynasties seem to be almost bereft of gold coins. This is true of the Pālas, who ruled for almost four centuries, and also of the Rāṣṭrakutas and Gurjara-Pratīhāras. After the few gold coins of Harṣa, Śaśāṅka, Jayanāga and Samācāradeva, all of whom ruled in the first half of the seventh century, we have some imitations of Gupta gold coins for which south-eastern Bengal (Bangladesh) Numismatics was the core area.¹⁸ Made of base metal, these coins are substandard in both purity and artistic style. Even their issuance seems to have stopped by the middle of the eighth century.¹⁹ A numismatist has located 46 hoards of the base-metal silver coated Ādivāraha and Śrī Vighrahapāla coins attributed to the Pratīhāras, and on this basis he prefers to entitle his dissertation dealing with the early medieval conage as *Living Without Silver*.²⁰

In peninsular India we notice a general decline in the issuance of coins after the end of the rule of the Satavahana in the first half of the third century A.D. Of course the Visnukundins issued a good number of coins between 450 and 475²¹. Their tradition was revived by the Eastern Calukyas of Vengi whose coins are found in the last quarter of the seventh and also during the eighth century;²² the total number of the coins of the Eastern Calukyas who ruled from the beginning of the seventh century to almost the end of the third quarter of the eleventh century is more than 15000. This may have been because of the needs of coastal trade. But by and large after the sixth century of about 400 years the south Indian dynasties seem to have discarded the practice of issuing coins. A careful study of the coin-finds in the Deccan and South India shows very little of metal money after the sixth century.²³ Between 600 and 1000 we witness the rule of the Pallavas, Pandyas, Calukyas of Badami and of the Colas, but very few coins can be attributed to them.

Most excavated sites show break in settlement after 300 or 600. But where ever there is continuity, albeit in a depleted form, it is very difficult to find coins in the strata attributed to post-Gupta times. We may examine the case of Ahichhatra where there has been horizontal digging. It is significant that no coins have been found here between the early Gupta period and the second half of the ninth century. In the period 350-750 the coin of Acyu appears in its earliest stage.²⁴ No coins are mentioned in the

context of 750-850; the following period 850-1100 is dated on the basis of gadhaiya coins attributed to Pratihāra rulers,²⁵ but the dating of the coins seems to be problematic. Similarly there is the case of Malhar in Chhatisgarh where excavation shows continuity of coinage till the rule of the Śarabhapūriyas, up to the end of the sixth century or so. Then follows a break of nearly four centuries, and coins reappear only under the Kalauris. As far as I know the early medieval strata of the excavated sites are not commonly credited with the discoveries of coins.

The period 500-1000 also lacks the apparatus for producing money. The absence of actual mints, moulds and dies is striking.²⁶ Bullae or imitations of coins in terracotta, lead, etc., appeared in peninsular India in the earlier period, but because of substantial reduction in the issuance and circulation of metal money, even the practice of making such imitations disappeared in early medieval times.

It is true that rates of interest are mentioned in inscriptions of the ninth and tenth centuries in south India, and *Kasu* and *Kalanju* are the two terms used for coins. *Kasus*, till today, are small chips of copeer which are offered to the deities because of the religious purity attached to this metal. Even now 25-30 *Kasus* can be bought for a rupee.²⁷ Of course the term *Kasu* was so widely used in south India in subsequent times that the English word cash is derived from it. But actual coins attributable to the ninth-tenth centuries have not been found. Probably rates of interest were calculated in notional terms of money rather than in actual terms. When the British annexed Assam, they found that taxes were assessed in rupees and collected in cowries. What ever may be the actual position the high rates compared to these mentioned in the earlier law-books show that metal money was not easily available.

The absence of coins has been noticed even in the case of neighbouring areas such as that of Nepal whose boundary marches along a good length of the borders of north-eastern India. The complete absence of published coins in that country between the eighth, and the sixteenth century has been noted by numismatists.²⁸

Compared to earlier times the paucity of metal money is evident in the major part of the Ganga plains and in peninsular India, so far as the various ruling dynasties of the seventh to the tenth century are concerned. However dynastic coins are found in the outlying areas. They are found in south-eastern Bengal which now forms part of Bangladesh and also in Punjab which now forms part of Pakistan. If we leave out the Eastern Calukyas, the Pratiharas and the dynasty of Kashmir, dynastic metal money seems to have been almost non-existent within the present boundaries of India during the seventh-tenth centuries.

The metal money found in Sylhet and Chittagong in Bangladesh is considered to be partly inspired by the South-East Asian tradition. The Caadras of Arakan in Burma issued Bull Trishul types of coins which were continued by the 'Akara' dynasty in the Mainamati areas.²⁹ This also seems to be the case with the Harikela coins.³⁰ The Akara coins are placed in the mid-ninth century.³¹ 297 coins in all were discovered during Mainamati excavations. A good many of them bear the name Pattikera and appear to be local issues.³² According to Robert Wicks the Harikela coins presently number about 600, "the most extensive of any early south-east Asian coinage"³³ and the vast majority of them are found in south-eastern Bengal.³⁴ But B. N. Mukherjee reports the existence of 2,500 Harikela coins with some Calcutta collector. In his view those inscribed with the proto-Bengali character belong to the eleventh-twelfth centuries, and their number seems to be large. They are associated with the time of Devas (675-750), and the Candras, and the terminal period of their circulation is fixed in the twelfth-thirteenth centuries.³⁶ There is no doubt that some metal money was issued by local dynasties mainly in the coastal

areas of Bangladesh during the period (i.e. up to end of the tenth century) with which we are concerned. But the volume of money in circulation should be considered to be of crucial importance. The Harikela coins appear to be prolific after the tenth century. Coins vary in circulation according to the nature of the area. Capital city areas as well as coastal areas are expected to have dealings in coins. It is because of this that we have Harikela coins in Chittagong and Sylhet districts of South-east Bengal and Eastern Cālukya coins in the coastal area of Andhra. In any case the coins from the south-eastern districts of Bangladesh do not seem to have made any visible impact on the economic life of eastern India up to the tenth century or even later. The Sena inscriptions indicate that cowrise were in general use. Further, payment for services seems to have been made through land grants both before and after the tenth century in this area.

The situation seem to have been somewhat different in the north-western parts of the Indian subcontinent. Although the British Museum has about 500 each of the Shahi and Kashmir coins,³⁷ if other collections are consulted the number would be certainly much larger. The Hindu or Brahman Shahis issued coins between the eighth and the tenth century and later. The same would be true of the Kashmir Kings whose metal money had started much earlier. If the Shahi and Kashmir coins are considered along with those of the Indo-Sassanians circulating in north-western parts, we may think of a large pocket with monetary economy and may explain the lack of land grants in it. It seems that goods and services were assessed and remunerated in terms of cash.

On the basis of files relating to coin hoards in Lucknow Museum maintained since 1886 it is possible to give the number of various types of coins from the sixth to the twelfth century. Most of these coins are not available for examination. They had to be returned to the owners dealers probably because they were considered to be of little value; only certain selected pieces were retained in Lucknow Museum and distributed to other museums. According to the classification made in the files, which have been examined by A. K. Srivastava, they can be placed in some order of succession because of similarities and continuity. In order of succession, which may be overlapping, they fall into four types. These are the coins of (1) Indo-Sassanians, (2) Ādivarāha, (3) Bhoja/Bhojadeva and (4) Vighrahapāla. For those which are inscribed we have to go by the opinion of the experts who deciphered the legends at the time when the coins were brought to them for sale. Following their classification we find 2770 Indo-sassanian coins which mostly comprise silver ones. They have been reported mainly from districts in western Uttar Pradesh. Ādivarāha coins number 1669. They mostly come from western Uttar Pradesh and are described as made of silver or silver alloy. The coins attributed to Bhoja/Bhojadeva number 4880 although a hoard (no. 917) consisting of 2170 silver coins from Kheri district consists coins of both Vighrahapāla and Bhojadeva as mentioned in the file in that order. These 4880 coins are described as made of silver or silver alloy and mostly come from western and central districts of Uttar Pradesh. The largest number of coins is attributed to Vighrahapāla. Their total number is 7460, and they are mostly called silver with a sprinkling of billon. If we take into account also the hoard (no. 917) which contains both the coins of vighrahapāla and Bhojadeva, those of the former might rise to nearly 9000, while that of later would decrease by nearly 2000.

It is difficult to accept the view that all these were silver coins. They were coated with silver, and it is because of this that a scholar describes the early medieval period as one which lived without silver. But the dating of these various types of coins is a more difficult problem. The Indo-Sassanian coins were evidently issued in the sixth and seventh centuries, and even if we take account of those found in the museum of western India their total number would not be large.

The coins attributed to Ādivarāha in the files of Lucknow Museum are less than 2000. If we attribute all of them to Mihira Bhoja their period of issue ranges from 836 to 885. But those who have examined these coins from other places place them in the late tenth century on the basis of form of writing. They seem to have been issued by Vināyakapāladeva, a Gurjara-Pratīhāra ruler. They contain legend in the Nāgarī script of the tenth century.³⁸

The dating of Bhoja or Bhojdeva coins is all the more difficult. The kings bearing the name Bhoja found in the ninth and tenth centuries not only in the Pratīhāra line but also in the eleventh century in the Paramāra line. The name Bhoja was as popular as Vikramāditya, and many place-names carry this name. It is most likely that these coins belonged mostly to late tenth and to the post-tenth centuries. Silver coins of Bhoja occur along with two coins of the Paramāra king Siddharāja.³⁹

The largest number of coins in the files of Lucknow Museum belong to Vighrahapāla. The basis of this ascription is not known to us. In several cases only very few coins from the hoards were examined, and the whole hoard was attributed to Vighrahapāla⁴⁰. Secondly it is not easy to determine the date of the issue of these coins many of which are found along with the coins of the post-tenth centuries rulers. Of course some of them remained in circulation under the Sultans and even till Mughal times. If we go by the form of writing of a few letters on these coins they cannot be earlier than the late tenth century.

A painstaking attempt has been made to count three series of early medieval coins by Pratipal Bhatia, who relies on A. K. Srivastava's book and also considers other finds. Thus the total of (i) Indo-Sassanian, (ii) Śrī Vi and Śrī Vighra(ha), and of (iii) Śrī Ādivarāha and Śrī Vināyakapāla coins come to 27202;⁴¹ in our analysis, which includes coins of Bhoja and is confined to Srivastava's book, it comes only to 14009. All these coins are placed in the seventh-tenth centuries, but the dating and attribution of the second and third series of these coins raise the same difficulties as have been indicated above. It is significant that of the total of about 27000 coins of all the three series more than half, i.e. 16740, belongs to Śrī Vi and Śrī Vighra(ha).⁴² We think that Śrī Vi could include Vināyakapāla, Vijayapāla, Vikramāditya, Vighrahārājas and Vighrahapālas, and Śrī Vighra(ha) could cover Vighrahārājas and Vighrahapālas of different dynasties. Sometimes the Śrī Vighra coins are attributed to the Cahamana king Vighrahārāja II (AD 973)⁴³. Much depends on the dating of the few letters the coins contain and the strata in which they have been found in excavations. The context of increasing crafts and trade as well as the rise of larger states all over the country around the end of the tenth century may also be considered. On these counts they ought to be placed mostly either in the late tenth century or post-tenth centuries coins. It is rightly stated repeatedly that the coined money increased in the successive centuries,⁴⁴ but these centuries seem to be mainly post-tenth centuries.

It is clear that all coins associated with Bhoja, Śrī Vi, or Śrī Vighra(ha) cannot be attributed to the Pratīhāras. In the absence of adequate study of this problem we can draw only tentative conclusions.

When do coins reappear in good numbers in north Bihar? Coins that were recovered in 1984 and 1986 Nanlagarh, a Pāla fortress, in Begusarai district, give some idea. Although several thousands of them deposited in five clay pitchers came to light, only 289 were recovered by Ram Sekhar Singh of the State Archaeology Department of Bihar. All of them are inscribed, and they carry two letters Śrī and vi; some of them also contain the legend Śrī viga,⁴⁵ which is sometimes deciphered as Śrī vipa. It seems that the letters inscribed on the coins fall into a chronological sequence. The first category of coins bears least developed Nāgarī letters are Śrī/vi and Śrī viga, and such coins should be placed in the second half of the tenth century in the reign of the Pāla ruler Vighrahapāla II (954-971); their

number is small. The second category of *Śrī/vi* coins show more developed letters and should be placed in the second half of the eleventh century; some of them certainly belong to the reign of Vīgrahapāla III (1054-1071). The third category of coins containing the letters *Śrī* and *vi* belong to the twelfth century⁴⁶. The chronological classification is broadly confirmed by the *Śrī vi* coins found in the excavation of Antichak where they are placed in the uppermost strata from the eleventh to the thirteenth century.⁴⁷

If we go by our analysis of these few hundred coins, it would appear that they mainly range from the second half of the tenth century to the twelfth century. This might apply to thousands of such coins as are not available for examination. This trend in the issuance of coins ties up with similar trends in other parts of the country.

The so-called *Pratīhāra* and other coins that have been discussed above were made of base metal either alloyed or coated with silver, but mostly they contained copper. They generally weighted less than 4 grams in sharp contrast to Kuṣāna coppers which ranged between 17 and 7 grams. The coins of *Śrī Vīgra(ha)* from Naulagarh weighed from 3.970 grams to 3.500 grams.⁴⁸ Obviously such coins could hardly be useful for heavy transactions or for long-distance trade. They seem to have met the needs of local trade.

A far more intriguing problem relates to the *gadhaiya* paisa, found in large numbers in Gujarat, Malwa and Rajasthan. It also appears in considerable numbers in Maharashtra, and Delhi area. It appears also in Uttar Pradesh and Bihar. The *gadhaiya* coins are made of bronze coated with silver, and they are roughly around 3.4 grams in weight. It is thought that they were in circulation from the seventh to the twelfth century. But since they have been found in hoards containing the coins of the sultans of Gujarat, they were certainly used until the fifteenth century. The name *gadhaiya* was given to these coins not by numismatists but by the rural people who took the worn out human figure appearing on these coins to be a donkey.

Though the intrinsic value of these coins is far less than gold and silver coins, yet their existence in large numbers attests internal economic transactions. However the full implications cannot be worked out without an idea of the area and the volume of these coins as well as the period in which they circulated. The core area of the circulation seems to be Gujarat, Malwa and Rajasthan. Good parts of Gujarat and Rajasthan comprise infertile areas in which all the local needs would not be met locally. The coastal area of Gujarat would always have some amount of coin circulation via trade. But the period of the circulation of the *gadhaiya* coins raises ticklish problems. *Gadhaiyas* found in Baroda excavations are found in period III in the context of medieval painted pottery, which is attributed to seventh-tenth century; they appear in Period IV in the context of Islamic glazed pottery ascribed to thirteenth-fourteenth century. So far stratigraphically and palaeographically the *gadhaiyas* cannot be dated earlier than the tenth century.

Different types of *gadhaiyas* may belong to different periods and places, and this classification needs to be made. Archaeological and palaeographical exercises need to be supplemented by other methods. The shape, sizes, devices, weight and metal content may be examined, and progressive deterioration or improvement in them may provide clues to time and place. Association with dated coins is of obvious importance. To obtain an idea of the ratio between inscribed and uninscribed *gadhaiyas* is far more important. The existing evidence suggests that the *gadhaiyas* circulated in good numbers between the tenth and the twelfth century; the inscribed ones are placed in the eleventh and twelfth centuries.⁴⁹

However, in the case of some inscribed gadhaiya coins from Gwalior district H. V. Trivedi thinks that the stricker "could not have existed before the 10th century A.D."⁵⁰, this suggests the possibility of some date in that century. Although the Indo-Sassanian coins have not been clearly demarcated from the gadhaiyas in the various collections their number seems to be much smaller than that of the gadhaiyas. The larger number of the gadhaiyas may have something to do with the revival of the monetary economy from the eleventh century onwards.

The gadhaiyas were apparently produced by moneyers and private merchants. Compared to the gadhaiyas paisa the market value of the Kṣatrapa coin is great. A Kṣatrapa coin costs 40-50 rupees, but a few gadhaiyas can be purchased for one rupee.⁵¹ This difference in intrinsic value might be true of earlier times as well. Both gadhaiyas and punch-marked coins were issued by authorities other than the state, but the silver content of the punch-marked seems to be larger. The gadhaiyas did not have much of copper either. Most Kuṣāṇa coppers ranged in weight from 17 to 7.5 grams,⁵² although some coins went down to 4-5 grams. Kuṣāṇa coppers found in south Central Asia also have large weights. The average weight shows their much higher purchasing capacity than that of gadhaiya coppers which generally weighed in the range of 3 to 4 grams. Most coppers issued by Huviṣka range between 17 and 14 grams.⁵³ Even Gupta coppers, which are not too many, weigh 4, 5.5, 3, 2, and 5 grams; on an average their weight comes to 4 grams.⁵⁴ Because of their less intrinsic value the gadhaiyas could have been used only in small-scale transactions in weekly fairs called *hāṭs*.

Hoard of Roman coins of the third and fourth centuries have been discovered at Amaravati along the Krishna river in southern Maharashtra.⁵⁵ Byzantine coins of the fourth to the sixth century are also found. This phenomenon can be explained with reference to the situation in the Byzantium. Eleven or twelve mints were at work in the reign of Justinian I who ruled in the sixth century⁵⁶; more mints naturally meant more money, some of which may have flowed to India because of the old trade connections. There was a financial crisis in the Byzantine empire in the seventh century.⁵⁷ In the eighth century the Byzantium had five mints, in the ninth century three mints, and in the tenth century only two mints.⁵⁸ Naturally in this period we can expect very little of Byzantine money by way of trade. It is likely that the Islamic expansion constricted the Byzantine power and trade.

Some Ummayyad coins are found,⁵⁹ and 56 Abbasid gold coins have been noticed.⁶⁰ All this would suggest that some trade went on between India and the Caliphate in early medieval times. We know that there was no break in the coinage system of the Abbasids, who issued a large number of coins; their volumes have been estimated by some scholars.⁶¹

Similarly some Chinese coins have also been found in early medieval time, but gold coins are absent,⁶² and most of the other coins seem belong to a period after the tenth century.

Our overall view of the coins suggests that except the Indo-Sassanian and Eastern Cālukyan coins, we do not come across any types of coins which were issued in considerable numbers between the seventh and the tenth century within the present boundaries of India; dynastic series of coins are very few. Certainly the gadhaiya coins are considerable in number, but if we go by the dating of the inscribed ones they belong to the eleventh and twelfth centuries, although they circulate till the fifteenth century. In our opinion the total number of coins in 500-1000 known from various sources and collections discussed by us may not exceed 25,000. The same sources and collections indicate that the total number of coins between 200 B.C and A.D 300 could be nearly 90,000 and would include gold and silver coins. In this period copper and other coins had much larger weight.

Even between 500 and 700 not many coins were issued. Generally the coins that we have between 500 and 1000 possess less intrinsic value than the earlier coins. We notice a faint revival of gold coins in the eleventh century. These coins are certainly much inferior to Kuṣāṇa and Gupta coins, and they definitely loose in purchasing power. The striking thing about the period 1000-1300 is that we get a good number of dynastic coins in both the north⁶³ and the south, which can boast of few such coins in the earlier period. The reasons for this revival need investigation.

The situation in Soviet Central Asia seems to be somewhat different. The number of coins belonging to the period from c. 200 B.C to c. A.D 300 is not so large there as in the Indian subcontinent.⁶⁴ Kuṣāṇa gold and copper coins reported from Central Asia are not so profuse as we find it in the Indian subcontinent. But all the same their number is considerable. Altogether we find about 5000 Kuṣāṇa copper of the imperial type and nearly 70 golds. However most imperial Kuṣāṇa coppers are large in size and weight. In addition to imperial coins we have about 1000 copper imitations which spill over into the fourth century. In addition to these we have nearly 2400 coins which comprise Bactrian, Parthian, Sogdian, Punch-Marked and Roman coins. Their number comes to around 2400. Thus the total number of coins from Soviet Central Asia between c.200 B.C and c. A.D 300 roughly comes to around 8,500.

There is little information about the number of coins found in Central Asia between the fall of the Kuṣāṇa empire and the sixth century. Significantly enough between c. A.D 600 and c. A.D 800 no gold coins are reported from Central Asia; there are 5 or 6 gold coins of the Hephthalite Huns who issued them in imitation of the Kuṣāṇa coins till the fifth century. But Sogdian coins circulated in a limited area lying between Tadzhikistan and Uzbekistan. Of 5000 coins in circulation after c. A.D 500 most coins are Sogdian, and date from the seventh century; they last for about two hundred years. After the Arab conquest of Central Asia Arab (Abbasid coins) appear, and mostly Samanid coins date from the ninth century to the eleventh century.

It seems that trade declined for a century and a half after the fall of the Imperial Kuṣāṇa, but it revived from the sixth century onwards on account of the discovery of a new route. I am not able to give any idea of the number of coins issued by the Islamic rulers. But so far as the Sogdian coins of about the seventh-ninth centuries are concerned, their use for trade seems to be very limited. These were small silver or copper coins—one gram in weight—which could neither be of interest in trade to the Chinese nor to the people of the West. Whatever little we know of Central Asia shows that there was no paucity of coins in this region although the number of coins in the pre-500 period, particularly in c.200 BC – c. AD 300, seems to be larger.

In early medieval times, while coins decrease in number, population seems to have increased. The population of northern India in the seventh century can be roughly estimated on the basis of the total number of men mobilised by Harsa. If 10% of people were enrolled in the regiments, evidently supplied by the vassals, the total population would come to nearly 20 million.⁶⁵ By the same formula the total population of the middle Ganga plains under the Mauryas could be six million. Compared to this the total number of the punch-marked coins known to us from the various collections would not be less than 50,000. On the other hand compared to 20 million people of northern India the number of coins attributed to the seventh century dynasties in northern India seems to be too small. We know of nearly 9,000 Indo-Sassanian coins,⁶⁶ but only a few thousand could belong to the seventh century. These are very rough and even speculative indications, but at present it is difficult to think of better methods to establish correlation between the number of the people and the volume of money in circulation. The situation did not improve much during the following three centuries. We have certainly far less density of coins in 500-1000 than we have in earlier periods.

II. Economic Implications of Numbers

The cause of the shortage of the gold coin, especially of its almost total disappearance between 650 and 1000, are not easy to explain two factors can be identified. For two centuries or more northern India formed part of a wider change zone which accounted for a large portion of Central Asia. The Kuṣāṇas procured gold from the Altai mountains in Central Asia. The Central Asian gold may have been in use for some time after the third century. Even after the end of the Kuṣāṇa rule in the major part of northern India in the third century, the Indian traders continued to operate either as intermediaries or as direct traders in the silk trade with the Byzantium. But by the middle of the sixth century the Byzantine people learnt to grow silk,⁶⁷ which obviated the necessity of having Indian traders in the silk trade. Though we have no idea of how much gold came to India as a result of this trade, yet as intermediaries the Indian may have obtained Central Asian gold even after the end of the Kuṣāṇa rule.

A second external factor seems to have been the stoppage in the flow of the Roman gold/silver in considerable quantity after the third century or so. Despite attempts to prove unawareness of the drainage in Rome⁶⁸ numerous hoards of precious-metal coins from Rome found in India and Sri Lanka leave no doubt about the flow of yellow metal from Rome. However a drastic reduction in the flow of the Roman precious metal coins occurs in the third century. That the Roman precious-metal coins was tested by the Indian assayers is shown by the marks found on it. These coins may have been used as bullion, but since monetary economy was fairly well established in the country, a good many of these may have been melted for the issuance of the gold/silver series of Western Kṣatrapa and Gupta coins.

Although there seems to have been considerable trade between India and the Byzantine empire between the fourth and the seventh century,⁶⁹ it was substantially less than the volume of trade in the first three centuries. In early medieval times we notice a decay of classical cities in the eastern Roman empires,⁷⁰ and in any case urban life was far less vigorous in the Byzantium than it was in the earlier period.⁷¹ Given the prevalence of a parallel situation in India there was little scope for trade between the Indian subcontinent and the Byzantium.

India's long-distance trade, overseas or overland, did not completely disappear. A few Ummayyad and Abbasid gold coins have been found, particularly in western India,⁷² some Abbasid coins have also been found in Bangladesh;⁷³ and a few are deposited in the Indian Museum.⁷⁴ But in numbers they are far below in Roman coins. Although it is held that they influenced the second series of Harikela coins, there is nothing to show that they promoted the issuance of precious metal coinage in India on any scale.

We get considerable evidence of trade with China and Egypt from the eleventh century onwards.⁷⁵ Although we do not get too many coins from these countries, it is likely that some gold may have come to India from them. This can be linked up with the revival of gold coins, though much lighter in weight, by several Indian dynasties of central and northern India in the eleventh century.

Our ideas about the sources of gold in the Indian subcontinent are nebulous. The Kolar gold mines were worked around c. A.D 200 and also c. A.D 600, but evidence for their working for some centuries after the sixth century is not forthcoming. The Gupta and some other rulers may have obtained gold

and silver from the Kolar mines. However after the sixth century the technology of extracting it seems to have become obsolete. Gold vein, if found in softer stones, can be extracted with less difficulty. But if found in hard rocks such as those of granite and quartzite it can be effectively extracted with modern technology. Gold extraction from soft rocks or from the cists may have been exhausted, and apparently there was no further development in extraction technology for some centuries.⁷⁶

The second method of procuring gold lay in picking up placers, which were deposited in the course of the flow of streams carrying gold dust from the Himalayas to the plains; they are occasionally picked up in the streams of Himachal Pradesh. Hegde suggests that placers provided the chief source of gold in ancient times; this may have been the position right from the time of Darius to that of the Guptas.⁷⁷ But it appears that placers may have been exhausted or become too occasional. This is a problem which is better left to geologists. On the basis of literary references it is argued that units of gold and silver dusts could serve as a medium of exchange.⁷⁸ But as far I know such units have not been actually discovered so far. In the face of the long tradition of the prevalence of authorised, standardised money such units cannot be considered more useful in transactions despite their paucity.

The shortage of money indicates a pattern of economy in which taxes or in other words imposition made on the peasants almost ceased to be collected in cash. Obviously in early medieval times cash was not being made available or issued by the state to collect surplus from the peasants. The absence of cash is tied up with the payment of military, administrative and religious services through land grants. It is significant that no land grants inscriptions are reported from Kabul, Panjab and Kashmir areas. These are precisely the regions in which we have continuity of coinage in early medieval times. It may however be noted that we have references to land grants in the *Rājataranginī*.

How temples and forts were built and numerous pieces of sculpture fabricated can be surmised. Forced labour of unskilled type may have been used on a large scale in the construction of forts, temples and palaces. Excavation, transport of building material and similar operations may have been performed by the rural folk either out of religiosity or out of compulsion inherent in the imposition of *viṣṭi*, *sarvapiḍā*, etc. on them. Skilled labour or artisans have been supplied with the necessary provisions out of land grants made for the purpose.

In any case it is clear that land grants were made for servicing artisans attached to temples and monasteries, the same may have been the case with large household establishments such as those of the princes and landed magnats.

The needs of ordinary peasant households were met through the *jajmani* system which got strengthened in early medieval times. Shortage of money therefore indicates the buttressing of an economy in which local needs were mostly met locally.

Money contraction is also an indicator of decline of crafts and industries which were concentrated in urban centres. The archaeological evidence for the decline of urbanism also shows contraction of commerce and handicrafts. Sculpture in stone and bronze and temple architecture seem to be the only crafts that flourished in the early Middle Ages.

My view that paucity of metal money indicates less of trade⁷⁹ has been contested. It is argued that there was flourishing trade in c.700–c.1200⁸⁰. Of course local and long-distance trade never

stopped. It is a question of taking a comparative view based on the available evidence. There was no lack of Arab maritime activity both on the eastern and western coast of India. But during the pre-1000 period this cannot be compared with the Indo-Roman trade. The literary sources and actual coins which are used to support the presence of thriving trade mainly belong to the post-tenth centuries. This can be also stated on the basis of those who have worked on trade in early medieval times.⁸¹ There is no doubt that trade went on in the coastal area of Chittagong but not in the tamluk area. Hence the view about the general decline of trade in Bengal as a whole in the pre-1000 period⁸² may be true. However, the find of more Harikela coins in south-east Bengal and also of Vighrahapala coins in northern Bihar in late tenth and post-tenth centuries make it difficult to hold that trade declined in these states in the eleventh and twelfth centuries, as Tarafdar has stated.⁸³ Even those who argue for thriving trade admit that Indians did not play any important role in it.

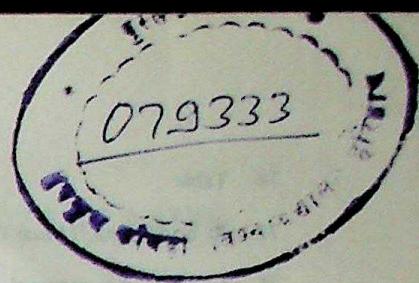
How do we justify the choice of c. A.D 1000 as marking the end of the paucity of metal money and the revival of trade in the country as a whole. Of course indications of trade in the form of dynastic coins are available in some measure from the late ninth century and more so from the late tenth century in northern India. But gold and other coins came to be issued in the post-tenth centuries by various dynasties in the country as a whole. The evidence for increasing trade is also obvious. Why all this should happen around A.D 1000 is difficult to answer. It has been suggested that even self-sufficient units may produce something for the local market.⁸⁴ This seems to have happened eventually in northern India because of the increase in the use of *arahaṭṭa* or water wheel in Rajasthan in the ninth and tenth centuries.⁸⁵ Similarly irrigation tanks (*vāpī*) seems to have become an important factor in Delhi area from the end of the tenth century onwards and in south Rajasthan and north Gujarat in the post-tenth centuries.⁸⁶ Their importance for irrigation in these centuries can be inferred from many inscriptions from Karnataka.⁸⁷ That agriculture registered a significant progress around the tenth century can be inferred from the texts of the *Agni Purāṇa* and *Kṛṣiparāśara*, both composed around the tenth-eleventh centuries. In eastern India the *Paryāyamuktāvalī*, a pre-Mughal text, mentions numerous cereals and other products grown in Orissa and Bengal,⁸⁸ but the source may not be as old as the eleventh century. In the case of Karnataka a good deal of evidence has been collected regarding the production of various kinds of cash crops from the eleventh century onwards.⁸⁹

Iron tools seem to have been available in plenty so much so that they were used for erecting victory pillars and also as beams in constructions in the post-tenth centuries.⁹⁰ All these factors may have significantly boosted agricultural production in the post-tenth centuries, although the process may have started earlier. Between the eighth and the eleventh century the thrust of the Arab trade lay in the Mediterranean area. But with the beginning of the Crusades this was diverted towards the east. Although the Arabs traded with Sindh and the Malabar coast even before the eleventh century, it was really in this century that they became very active in land trade in the north-western part of the subcontinent upto Multan. These traders operated in a major part of Pakistan, especially in its southern portion. Finally, the rise of larger and powerful states such as those of the Coḷas, Cālukyas, Kalacuris, Candellas, Cāhamānas, Paramāras, Caulukyas, Gāhaḍavālas, etc., around the end of the tenth century may have created better conditions for trade, for which coined money was needed.

REFERENCES

1. Joe Cribb, "India's Earliest Coins", *Coin Hoards*, VII, p. 281
2. Table II.
3. A.K. Narain & Gopal, ed., *Seminar Papers on the Chronology of the Punch-Marked coins*, Varanasi, 1955, pp. 1, 7
4. Table I.
5. Table II.
6. Table III.
7. Table VIII.
8. Table IV, Table V, Table VI, Table VII.
9. Stenven E. Sidebotham, *Roman Economic Policy in the Erythra thalassa*, Leiden, 1986, pp. 38-39.
10. Sidebotham, op.cit., p. 38.
11. Michael F. Hendy, *Studies in the Byzantine Monetary Economy c.300-1450*, Cambridge, 1986, pp. 372, 395f.
12. V.K. Shrivastav, "Kuṣāṇa evam Gupta Mudraon Ha Tulanatmak Adhyayan," Ph.D. Thesis, Banaras Hindu Univ. 1985, pp. 187-89.
13. Table III.
- 13a. Table II.
- 13b. A.K. Srivastava, *Coin Hoards of Uttar Pradesh 1882-1979*, The State Museum, Lucknow, 1980.
- 13c. Ibid., it is not quite clear whether all these are Nāga coins.
- 13d. R.S. sharma, *Perspectives in Social and Economic History Early India*, New Delhi, 1983, p. 180.
- 13e. Ibid. pp. 178-79.
- 13f. Ibid. p. 178.
14. *Indian Archaeology – A Review*, 1983-84, pp. 69-70.
15. *Coin Hoards*, VII. p. 333, hoard no. 510.
16. Information from S.M. Shukla, Numismatist, Bombay, who has made a deep study of the Ksatrapa coins and also possesses a good collection of them.
17. Information from T.G.M. Hegde.
18. Robert S. Wicks, "The Numismatic Geography of Post-Gupta Gold and Pre-Islamic Silver from Bengal, Bangladesh, Assam and Arakan, P.L. Gupta and A.K. Jha, (ed.), *Numismatics and Archaeology*, 2nd International Colloquium, Indian Institute of Research in neri, Nashik, pp. 54-55.
19. Ibid.
20. J.S. Dyell, "Living Without Silver", Ph.D. Thesis, University of Wisconsin, 1982.
21. Table III.
22. Information from I.K. Sharma and also see Table III.

23. B.D. Chattopadhyaya, *Coins and Currency System in South India*, New Delhi, 1978.
24. *Ancient India*, no. 1, pp. 39-40.
25. Ibid.
26. Even for the earlier periods we do not get too many dies.
27. Information from I.K. Sharma.
28. N.G. Rhodes & C. Valdetaro, "Coins in Medieval Nepal", *Numismatic Chronicle*, Seventh Series, XVI, p. 158.
29. Wicks, *op. cit.*, p. 56.
30. Ibid., p. 57.
31. Ibid., fn. 12.
32. B.N. Mukherjee, "Bearing of the Excavations at Mainamati (Bangladesh) on the Local Silver Coinage", P.L. Gupta and A.K. Jha, *op. cit.*, pp. 66-69.
33. Wicks, *op. cit.*, p. 57.
34. Ibid.
35. Communicated to me in a personal discussion in Calcutta on 27 July 1988.
36. B.N. Mukherjee, "Bearing of the Excavations at Mainamati (Bangladesh) on the Local Silver Coinage", P.L. Gupta and A.K. Jha, *op. cit.*, pp. 66-69; "Place of Harikela Coinage in the Archaeology of Bangladesh", *Journal of the Varendra Research Museum*, Vol. VII, 1981-82, pp. 59-68.
37. Table I.
38. B.M.S. Parmmar, "Ādivarāha coins", *JNSI XXVI*, 1964, p. 240. According to V.S. Agrawal these coins were issued by the kings of Gujarat and also the Gurjara-Pratīhāras of Kanauj in the tenth century ("Dramma-Coins of the Gurjara-Pratīhāra King Vināyaka-pāladeva, AD 914-933", *JNSI X pt-I*, pp. 28-30).
39. A.K. Srivastava, *op. cit.*, hoard no. 365.
40. A.K. Srivastava, *op. cit.*, only 4 out of 100 in hoard no. 360 and only 3 out of 247 in hoard no. 438 were examined.
41. "Note on the Physical Distribution of the Indo-Sassanian, Śrī Vi, Śrī Vighraha and Śrī Adivaraha coins in the Ganga Valley, C. AD 700-1000", Paper presented to the Platinum Session of the Numismatic Society of India, Patna, 1987 (unpublished).
42. Ibid.
43. R. K. Sethi, "The Attribution of the Sri-Vigra coins", *JNSIR XXX*, 1968, pp. 208-10.
44. P. Bhatia, *op. cit.*
45. R. S. Singh thinks that this should read *vi pa*, and Dr. Jagdishwar Pandeya seems to agree with him. But I am inclined to agree with Dr. Roy provided more legible specimens are available.
46. We have attempted this chronological attribution on the basis of an examination of the material with the help of Dr. Sitaram Roy.
47. Information from S. K. Choudhury of Vikramashila Project, Patna.
48. Information from R. S. Singh.



49. P. C. Roy, op. cit., pp. 141-46.
50. "Inscribed Gadhia Copper Coins", *JNSI*, XVI, 1954, pp. 281-82.
51. Information from S. M. Shukla, Numismatist, Bombay.
52. Vinay Kumar Shrivastav, "Kuṣāṇa Evam Gupta Mudrāṇ Ka Tulanātmak Adhyayan", Ph. D. Thesis, Banaras Hindu University, 1985, pp. 187-89.
53. Ibid., p. 189.
54. Ibid., p. 190.
55. Carmel Berkson, *The Amazon and the Goddess : Cognates of Artistic form*, Bombay, 1987, pp. 16-17.
56. Warwick Wroth, *Catalogue of the imperial Byzantine Coins in the British Museum*, Vol. I, London, 1908, Introduction, pp. xciv, c iv.
57. Ibid.
58. Ibid., p. CIV.
59. Table V.
60. Ibid.
61. "Early Islamic Output", prepared by a seminar at the University of Michigan, *Journal of the Economic and Social History of the Orient*, IX, 1966, pp. 212-41.
62. R. S. Sharma, *Urban Decay in India (C. 300 – C. 1000)*, New Delhi, 1987, pp. 129-30.
63. P. C. Ray, *The Coinage of Northern India*, Delhi, 1980.
64. All that I say in this and the following paragraphs about the number and other aspects of the coins from Central Asia is based on an informative discussion with Alexander Niktin, Scientific Worker, Hermitage Museum, Leningrad on 30 September and 1 October 1988. Most of these coins are deposited in Leningrad, Moscow, Tashkent, Dushambe and Samarkand museums. Some of these are registered
65. R. S. Sharma, *Urban Decay in India (c. 300 – c. 1000)*, Delhi, 1987, p. 172.
66. Table VII; A. K. Srivastava, op. cit.
67. Richard Pankhurst, *An Introduction to the Economic History of Ethiopia*, pp. 46-47.
R. S. Sharma, *Indian Feudalism*, pp. 54-55.
68. Sidebotham, op. cit.,
69. Bergson, op. cit.,
70. Clive Fess, "Coin Archaeology and the decline of classical cities in Asia Minor", P. L. Gupta and A. K. Jha, ed., op. cit., pp. 32-34.
71. Michael Hendy, *Studies in Monetary Economy in the Byzantine Empire*, Cambridge University Press, 1985.
72. Table
73. B. N. Mukherjee, "Place of Harikela Coinage in the Archaeology of Bangladesh", *Journal of the Varendra Research Museum*, VII, 1981-82, p. 96.

74. Table
75. R. S. Sharma, *Urban Decay in India*, pp. 130-137.
76. I owe all this material on extraction to Professor T. C. M. Hegde as a result of discussion with him in Delhi on 23 December 1987.
77. Ibid.
78. This view was earlier expressed by D. C. Sircar and has been stated by B. N. Mukherjee in "Commerce and Money in the Western and Central Sectors of Eastern India (c. AD 750 – 1200)" in *Indian Museum Bulletin*, 1982, p. 75.
79. R. S. Sharma, *Indian Feudalism*, Delhi, 1980, p. ; *Urban Decay in India* (c. 300 – 1000), pp.
80. B. N. Mukherjee, op. cit., *Indian Museum Bulletin*, Calcutta, 1982; "Media of Exchange in Early Medieval North India", *Numismatic Digest*, X, December, 1986, pp. 91-105.
81. Lallanji Gopal, *Economic Life in Northern India* (c. 700 – c. 1200), Delhi, 1964; B. N. S. Yadava, *Society and Culture in Northern India*, Allahabad, 1973; V. K. Thakur."
82. M. R. Tarafdar, "Trade and Society in Early Medieval Bengal", *The Indian Historical Review*, IV, 1978, p. 274ff. Reproduced in D. N. Jha, ed. *Feudal Social Formation in Early India*, Delhi, 1987, pp. 220-38.
83. Ibid.
84. Ibid.
85. B. D. Chattopadhyaya, "Irrigation in Early Medieval Rajasthan", *Journal of the Economic and Social History of the Orient*, XVI, 1973, 298-316.
- Many Tomar vāpīs can be identified in Mehrauli area.
86. V. K. Jain, "Trade and Traders in Western India (AD 1000 – 1300)", Ph. D. Thesis, University of Delhi, 1981. The distribution of wells and tanks in Western India in 1000 – 1300 is shown in a map in this study.
87. R. N. Nandi, Presidential Address, Ancient India Section, Indian History Congress, forty-fifth session, Annamalai University, Annamalai Nagar, 1984, pp. 35-39.
88. For details on agricultural knowledge and technology see R. S. Sharma, "How feudal was Indian Feudalism?" in the *Journal of Peasant Studies*, nos 2-3, January-April 1985.
89. R. N. Nandi, op. cit., pp. 40-49.
90. "How feudal was Indian Feudalism?", op. cit.
91. H. C. Verma, *Medieval Routes of India. A Study of Trade and Military Routes*, Calcutta, 1978, Chapters I to IV; "Trade and Trade Routes on North-West India in the 10th – 14th Centuries", *Social Science Probings*, Vol. IV, 1987, pp. 91-95.

SHIPS ON SEALS FROM CHANDRAKETUGARH

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A PART from Inscriptions and Coins, the third most important documented source is Seals and Sealings for the reconstruction of ancient Indian history and culture. A seal is that by which the impression is made on some suitable material like lac or clay etc. Such clay or lac pieces with impression of the seal are called sealing (or *Mudrāṅka*). The use of seals was very common in ancient India. Ancient Indian Literature mentions them as *mudrā*.¹ Literary references show that seals can be classified into two main categories (1) *abhijñāna mudrā* (i.e. the seal of authentication, recognition or identification); (2) *dharmamudrā*, which have some religious import (votive or moral). According to the *Arthasāstra*, unsealed goods were liable to a fine.² According to the *Dharmakośa*, (Quoting *Vṛiddhavaśiṣṭha*), official and private letters, documents and royal orders and proclamations were authenticated by official seals.³ The *Arthasāstra* mentions several methods of sending messages of the enemy movement in jungle area by trained and domesticated pigeons to carry sealed messages.⁴ During his return journey to China, the Chinese pilgrim Hiuen-Tsiang procured letters from the King Harsha, which were authenticated with the seal of the King, addressing the rulers of those countries through which the Chinese pilgrim had planned to pass.⁵ The ancient literature refers to the seals for a variety of purposes. The *abhijñāna* class of seals were used for identification, authorisation or protection from pilferage or forgery etc. Kings, royal officers, private individuals used to have their own seals according to their business. The other type of seals were religious in nature and use, which are better to call as *dharmamudrā*. Such seals are used by the religious establishments for their own business or were offered to the faithfuls as mementos. The actual finds and the literary references attest this. Some of the seals found in excavations and explorations, bear sign (reverse side — cord mark) of being attached to a document by a cord and some bears no sign on their reverse. Such seals were either votive or used as passes.

During archaeological excavations or as chance finds in West Bengal, the inscriptions in Kharoshṭī are noticeable on pots, plaques and seals. The highest number of the relevant antiquities have been yielded by the Chandraketugarh area (district North 24-Parganas and 35 miles north-east of Calcutta; Lat. 22° 41' and Long. 88° 42').

In the case of some seals, which consist of incised legends in mixed nature (i.e. Kharoshṭī-Brāhmī character), in addition to the Brāhmī inscriptions in the regular impressions. These seals betray a deliberate attempt to create a hybrid or rather a 'mixed script'. In this connection, first meaningful breakd through has been made by renowned Kharoshṭī specialist Professor B. N. Mukherjee in the year 1989, deciphering legends on such seals.⁶ In this context certain seals are in stamped impressions of devices and legends only in the 'mixed script'. According to B. N. Mukherjee these seals were probably made in an area (or areas) and during a period when native (or immigrant die-cutters) were in a position to engrave on matrices Brāhmī and Kharoshṭī letters in reverse. In the early centuries of the Christian era a certain community or several communities migrated from the zone of Kharoshṭī and North-Western Prākṛit, to one or more than one area in the territory of West Bengal. In their new habitat they continued to use their own script (Kharoshṭī) and form of the Prākṛit Language (North-

Western Prākṛit). Afterwards certainly they introduced the mixed script for maintaining a distinction between the script of their dialect and that of the local form of Prākṛit as well as for making themselves conversant with local Brāhmī.⁷ A text⁸ dated between *circa* 1st century and 2nd century A.D. mentions a script as 'Miśritālipi'. This hybrid or rather 'mixed script' has been possibly referred to as 'Miśritālipi' in the *Lalitavistara*,^{9a} as suggested by Professor Mukherjee.^{9b} Undoubtedly Professor Mukherjee's claim can be treated as a solid archaeological proof on the literary reference mentioned in the ancient text *Lalitavistara* as 'Miśritālipi'.

In this article, only five such seals, from Chandraketurgarh area now are in possession of different private and public collections with masted ship device (which is common in five cases) and with Kharoshṭī-Brāhmī legend are included for further discussion.

They are as follows —

No. — 1. The seal (Fig. — 1) impression (Terracotta; nearly round, dull red colour; bearing the impression of a circular seal with a diameter 3.2 cms., a trader's identification ticket or seal), displays¹⁰ within a decorated circular border a masted ship with a flying banner; a stalk of grain and a taurine symbol in the right and left fields respectively; a Kharoshṭī-Brāhmī inscription from outside and from left to right¹¹ as follows — (in this case first letter is Brāhmī) '*Jidhatradhana-jusatrassa tridesojatra*' i.e. (= *jitatradhana yaśodasya trideśayātrā*) meaning 'the journey to (or in) three directions of Yasoda, who has earned food-wealth' (i.e. whose wealth is earned by selling food).

On the basis of palaeographic features, the date of the inscription is *c.* 3rd century A.D.

On the reverse side, a groove is visible (which was possibly created by a insertion of a cord), used for attaching the object to some consignment as an identification ticket.¹²

No. — 2. A pink coloured and nearly round terracotta object (Fig. — 2) bear the impression of a seal (terracotta; diameter of the impression of the seal 3.5 cms.; a trader's identification ticket or seal). The impression¹³ displays stalk of grain in a basket placed on the board of a masted ship with a flying banner. In the upper right field a couch is placed upside down. A Kharoshṭī-Brāhmī inscription from right to left¹⁴ and partly from inside and partly from outside, as follows— (in this case first letter is Kharoshṭī) '*Soridhajasā* (read from inside) *Dijammassa jaladhi sakla* (read from outside) i.e. (= *suriddhayasā Dvijammasya jaladhiśakra*) meaning 'the ship called '*Jaladhiśakra*' (i.e. Indra of the Ocean) of the person *Dvijanma*, who is famous as very wealthy'.

On the basis of palaeographic features, the probable date of the inscription is *c.* 3rd century A.D.

On the reverse, there is a groove mark.¹⁵

No. — 3. An impression of a round seal (Terracotta, diameter of the impression 2 cms., a trader's identification ticket or seal) displays (Fig. — 3)¹⁶ within a decorated circular border a masted ship with flying banner, a Svastika symbol in the upper left field, a figure of a horse¹⁷ on the right hand field and the right edge of the ship. The horse is shown in profile with its head towards the mast, its mouth, an eye, an ear and the hind leg and the tail also appear on the seal impression. The figure of the horse is depicted rather large in proportion to the entire composition (the artist seems to have deliberately enlarged the figure to draw attention of the viewer to the animal). A Kharoshṭī-Brāhmī inscription (in two lines), the first line can be read from outside and from left to right^{18a} (in this case first letter is

Brāhmī) as follows : 'Tasvoda jana Hovaji(no)ṇa T(r)apyā'; the second line from right to left^{18b} (in this case, letters are in Kharoshṭī) 'Gasa' (above the letter 't(r)a' of the first line, probably for want of space) meaning of the ship of the class of *Trapyaka*, belonging to (*i.e.* owned by) the powerful 'Tasvodaja family'.¹⁹

The Palaeographic features of the above inscription can be dated *c.* 3rd century A.D.

On the reverse there are indistinct traces of the impression of an oval seal.²⁰

No. – 4. A round seal²¹ impression (Fig. No. 4) shows (terracotta, an impression of a royal seal) within a circular border a masted ship with flying banner and a couch symbol is placed in the upper right hand field corner, upside down. A Kharoshṭī-Brāhmī Inscription from outside and from left to right²² (in this case first letter in Brāhmī) as follows— '*Jemdhāṣ jujusya*' *i.e.* (= *jayamta shahi jujoh*) meaning 'of the juju, the conquering king'.²³ On the basis of palaeographic features, the date of this inscription is *c.* 2nd century A.D.²⁴

No. – 5. A slightly damaged round seal²⁵ (Fig. – 5) with a partly broken hemispherical back (Terracotta, diameter of the circular impression 3.8 cms., charm or seal) displays within a border of dots, a masted ship (or boat) fitted with a banner and in the upper left hand field a round symbol. A Kharoshṭī-Brāhmī Inscription from inside and from left to right²⁶ (in this case first letter starts with Brāhmī character) as follows — '*Bhajotha dijre* (or *jri*) *Ssudhradho*' *i.e.* (= *Bhajatha dvijeshu udadhau*) meaning 'you take resort upto the Brahmins (while) at Sea'.

The palaeographic features indicate the date of the above inscription, *c.* 2nd century A.D.²⁷ In a small diameter, a seal or sealing basically reflects two types of informations by its concise device as well as by its legends, though each type of information more or less supporting each other and put a total glimpse on the context, for which the seal was made. These five seals, which are included for discussion, cater various informations in connection with economic (particularly maritime trade history), political and socio-religious history of the period prior to the Gupta age of that part of Bengal, which was in dark till 1989.²⁸

It appears from the first seal's legend (No. – 1, Fig. – 1) that it belonged to a merchant who was engaged in overseas trade in food grains in three directions (or three countries). This is supported by the device of a sea-going vessel (masted ship) and also a stalk of grain. Another seal (No. – 2, Fig. – 2) mentions that the merchant was a overseas food grain trader, which is also corroborated by the device—a masted vessel and on the middle of the board a basket with a stalk of grain. The seal's legend states the name of the ship as '*Jalodhisakla*' *i.e.* (*Jalodhiśakra*) meaning 'Indra (Lord) of the ocean'. The name of such merchants in the mixed script allude to their north-western origin—such as 'yasoda' (No. – 1) and Dvijanma (No. – 2). Dealers of food grains are mentioned themselves as wealthy persons. Possibly the agricultural industry and trade were the main attraction to the outsiders and became convenient instruments for getting rich. The seal (No. – 3) under discussion, bears the device of a masted ship and on the right hand board a figure of horse in large proportion.²⁹ The seal legend mentions its owner family called 'Tasvodaja' as the power conquering. Possibly the owner family of the ship became not only wealthy, but also powerful by conducting trade in shipping. The legend of the same seal (No. – 3) also refers to the class of ship as 'Trapyaga'. The name can be certainly identified with that of the 'Long ships' called 'Trappaga' in the *Periplus Tes Erythras Thalasses* (sec. 44).³⁰ According to the text, it was used for coastal voyages. The same type of craft is also mentioned as 'Tappaka'

in a c. 4th century A.D. Jain text.³¹ The 'Trapyaka' class of craft was used not only in the west coast, but also in the eastern sea board and the deltaic areas of ancient Vanga.^{32a} This class of craft, in addition to piloting vessels to a port, was also utilised for transportation of commodities as horse.^{32b} The Tasvodaja family was one of the early owner in ancient Indian History so far known. The name of the family 'Tasvodaja' mentioned on the seal, is an Iranian origin. Professor B. N. Mukherjee suggests³³ that horses were brought to ancient Vaṅga by Kharoshṭī using north-western immigrants and at least some horses were despatched to South-East Asia. According to Ranabir Chakravarti,³⁴ this seal impression from Chandraketugarh furnishes convincing proof of Professor Mukherjee's suggestion about the role of ports of Vaṅga in the maritime trade of horses. This seal certainly can be treated as the earliest known evidence of shipping of horses from an Indian port. In this connection, unearthed archaeological materials from Chandraketugarh do not show anything.³⁵

Another seal (No.- 4) with same masted ship device refers to an individual king named 'Juju' with an epithet 'Jemdhās (i.e. *Jayanta-shahi*),³⁶ which means victorious or conquering. On the basis of device depiction, it can be inferred that the king 'Juju' had some strong fleet as his own (for maritime trade or as military power). Last Seal (No.- 5) with masted ship device bears an inscription in mixed script 'Let you worship the Brahmin while at sea'. This is possibly a charm. This had been issued by a certain brahmin to a sea voyager (possibly a sailor or a passenger of Vaṅga) as a sanctified tailsman to protect the individual (or his ship) from any calamity during the voyage. It possibly indicates the eminence of Brahmin in the society as well as others faithful attitude towards them. In this connection certain Brahmin perhaps had the right to issue such charm for faithful individuals during their sea-journey.

Among the above mentioned five seals, first four can be treated as *abhijñānamudrās* of individual traders (No. 1, No. 2); family (No. 3) and a king (No. 4) respectively. Whereas the last one (No. 5) can be depicted as *dharmamudrā* for a particular purpose.

In case of depiction of the device-masted ship, there is a little bit variation in each cases. Particularly in one case (No. 1, Fig. 1) arrangement of mast is quite elaborate. At the centre of the hull, stands a single mast with a tripod base. Near the top of the mast a rectangular object with holes is visible from which a pair of parallel ropes have come downward on each side of the mast. This is possibly ships rigging arrangements, though sail is not visible in the context.³⁷ How far the sail was utilized in ancient India, is open to question. A oar (or rudder?) like figure is also clearly visible, attached with the ship (Fig. 1; Fig. 4; Fig. 5).

Lastly, it can be said from above discussion, that one or more than one community migrated to the territory of lower West Bengal particularly Chandraketugarh area in the early centuries of the Christian era (c. 1st to 4th century A.D.) from the north-western section of the Indian sub-continent. A country named after 'Ganges' in foreign sources³⁸ and Vaṅga in Indian texts³⁹ include parts of modern lower West Bengal, including its littoral area and western sections of coastal Bangladesh. Antiquities found from the Chandraketugarh area in the district of 24-Parganas (North) clearly indicates its importance as an urban centre in the age concerned. According to Prof. B. N. Mukherjee Vaṅga had direct or indirect trade relations through sea routes with some countries of South-east Asia, China, Śrī Lāṅka and even certain ports of peninsular and western India in the early centuries of the Christian era (upto c. 4th or 5th century A.D.).^{40a} These merchants migrating from the north-west possibly brought Central Asian horses to Vanga and transhiped from its port,^{40b} which is also corroborated by one such seal found from Chandraketugarh (No. 3; Fig. 3). The immigrants' interest in large scale agricultural

cultivation as well as its trade is proved by the Kharoshṭī and Kharoshṭī-Brāhmī inscriptions, which are recently found. Latter it is also corroborated by the seals (No. 1 and No. 2) mentioned earlier. The participation of such immigrants in ancient Vanga's trade certainly influenced the emergence of a metrology of local copper coins based on a Kushana and indigenous monetary systems, as suggested by Professor B.N. Mukherjee.⁴¹ These immigrants were certainly strong enough to continue their own script as well as language and to introduce a new form of script, *i.e.* Kharoshṭī-Brāhmī script.

REFERENCES

1. E. B. Cowell, *The Jātaka or Stories of the Buddha's Former Births*, Cambridge, 1895 to 1913.

(a) Jātaka No. 4 (*Chullaka-seṭṭhi Jātaka*),

(b) Jātaka No. 7 (*Kaṭṭhahari Jātaka*),

(c) Jātaka No. 40 (*Khadiramaṅgala Jātaka*),

(d) Jātaka No. 125 (*Kaṭāhaka Jātaka*),

(e) Jātaka No. 214 (*Puṇṇadi Jātaka*).

Kātyāyana Smṛiti Sāroddhāraḥ (ed.) by P. V. Kane, Poona.

“*Likita tu sadā dhāryā mudrita rājamudraya*”, p. 9, verse 48.

“*Vināpi mudrayā Lekhayam pramaṇam mṛitasākshikam*”, p. 40, verse 303.

also see, p. 39. verse 296.

Yājñavalkya Smṛiti, (ed.) by N. S. Khiste, Chowkhamba, Varanasi, 1930, I. 317.

Harshacharitam, uchchhvaśa (ed.) by J. Vidyasagar, Calcutta, 2nd edition, 1892, IV, p. 260.

Abhijñāna Śakuntalam (ed.) by Gajendra Gadkar, Surat, 6th edition, Act-I, p. 26.

Nitivākyāmṛita of Somdeva, (ed.) by P. L. Soni, Bombay V. S. 1979, Chapter XX, pp. 200-201.

Mudrārākshasa of Viśākhadatta, (ed.) by K. H. Dhruva, Poona, 1950, 3rd edition, p. 12, and pp. 64-65.

Dhammapada commentary of Buddha Ghosh, Harvard Oriental Series, Vol. XXIX, p. 103.

Divyāvadana (ed.) by E. B. Cowell and R. A. Neil, Cambridge, 1886, p. 410.

Kāmandakiya Nitisāra, Venkateswar Press, Bombay, Samvat 1961, VII, 28.

2. *Arthaśāstra* (trans.) R. Shama Sastry, Mysore, 1960, 6th Edn.

II. 21 “*amudrāṇāmatyayo deyadvigunaḥ*”

“*kvachābhijñāna mudra vākṛita*”

“*Kuṭamudrāṇam śulkaśṣṭagaṇo-daṇḍaḥ*”.

See also II. 7; II. 13; IV. 9; III. 12; VI. 1.

3. *Dharmakosa*, (ed.) by Lakshman Sastri Joshi, Vol. I, (3 pts., 1937, 1938, 1941).
Quoting *Vṛiddhavaśiṣṭha*, p. 378.
“*Prādivākahastāṅkaṁ mudritaṁ rājamudrayā*
Sidhyarthe vādino dadyājjayino jayapatrakam”.
4. Same as No. 2.
II. 34 “*Amitrā tavisāñchāraṁ cha rājño –*
gṛiha kapotair mudrāya ktairhārayeyuḥ”.
5. S. Beal, *The Life of Hiuen-Tsian* (by the Saman Hwui li), London, 1911, pp. 189-90.
6. In this connection, first seal, was a terracotta object unearthed in the year 1938-41 during an excavation at Bangarh, (see, K. G. Goswami, ‘Excavations at Bangarh, Calcutta, 1948, p. 13; Pt. XXIV, No. 5); see also B. N. Mukherjee, ‘From Hindukush to Bengal’, *The Sunday Statesman Miscellany*, 17th June 1990; B. N. Mukherjee, ‘Decipherment of the Kharoshṭī-Brāhmī script’, *Asiatic Society Monthly Bulletin*, Vol. XVIII, No. 8, August 1989; Rangan K. Jana, ‘New Light on Kharoshṭī Inscriptions’ — *The Statesman Literary Supplement*, 20th June, 1992.
7. B. N. Mukherjee, ‘Discovery of Kharoshṭī Inscriptions in West Bengal; *The Quarterly Review of Historical Studies*, Calcutta, Vol. XXIX, 1989-90, No. 2, pp. 6 to 14.
8. *Lalitavistara* (ed.) by P. L. Vaidya, Darbhanga, 1958, 10th Adhyaya, p. 88.
- 9a. As No. 8 (above).
- 9b. As No. 7 (above).
10. Provenance — present deposition and accession No : Chandraketurgh; Directorate of Archaeology, West Bengal: CKG -184.
11. ‘The direction of writing in case of mixed script is from left to right, if the initial letter of the sentence or expression concerned is in Brāhmī and from right to left, if it is in Kharoshṭī’, as suggested by Dr. B. N. Mukherjee; see also B. N. Mukherjee, ‘Discovery of Kharoshṭī Inscriptions in West Bengal’, *The Quarterly Review of Historical Studies*, Calcutta, Vol. XXIX, 1989-90, No. 2, pp. 6-14.
12. B. N. Mukherjee, ‘Kharoshṭī and Kharoshṭī-Brāhmī Inscriptions in West Bengal’, *Indian Museum Bulletin*, Calcutta, 1990, p. 45, No. 6 (Hereinafter Mukherjee, *IMB*).
13. Provenance, Present deposition and accession No : Chandraketurgh, Indian Museum, Calcutta, 90/181.
14. Same as No. 11 (above).
15. Mukherjee, *IMB*, p. 47, No. 10.
16. Provenance, present deposition and accession No: Chandraketurgh, Directorate of Archaeology, West Bengal, CKG: 180 (T 687).
17. Ranabir Chakravarti first locates the impression of horse on the said seal. See, Ranabir Chakravarti ‘Maritime trade in Horses in Early Historical Bengal : a seal from Chandraketurgh’, *Pratnasamiksha* (Journal of Directorate of Archaeology, West Bengal) forthcoming.
- 18a-b. Same as No. 11 (above).
19. The expression ‘hova’ — can be connected with the ‘Saka word ‘hauva’ meaning ‘power’, see H. W. Bailey, *Dictionary of Khotan Saka*, Cambridge, 1979, p. 500.

20. Mukherjee, *IMB*, p. 47, No. 11.
21. Provenance. Present deposition : Chandraketurgh; Professor G. C. De, South Habra. P. O. Habra, Dist. 24-Parganas(N).
22. Same as No. 11 (above).
23. Mukherjee, *IMB*, p. 48, No. 13.
24. *Ibid.*
25. Provenance. present deposition : Berachampa (North 24-Parganas), Professor G. S. De, South Habra, P. O. Habra, Dist. 24-Parganas(N).
26. Same as No. 11 (above).
27. Mukherjee, *IMB*, p. 57, No. 51.
28. B.N. Mukherjee, 'Decipherment of the Kharoshṭī-Brāhmī Script', *Asiatic Society Monthly Bulletin*, Calcutta, Vol. XVIII, No. 8, August, 1989.
29. Same as No. 17 (above).
30. The periplus of the Erythraean Sea, edited and translated by G.W.B. Huntingford, London, 1980, p. 45, (Section 44.)
31. *Aṅgavijjā* (ed.) by Muni Punyavijayaji, Benaras. 1957, Introduction, p. 45.
- 32a-b. Same as No. 17 (above).
33. B.N. Mukherjee, *The Economic factors in Kushana History*, Calcutta, 1970. pp. 37-38.
34. Same as No. 17 (above).
35. D.K. Chakravarti, 'Chandraketugarh' in A. Ghosh (ed.), *An Encyclopedia of Indian Archaeology*, Vol. II, Delhi, 1989, pp. 95-96.
36. Mukherjee, *IMB*, p. 48, No. 13.
37. Ranabir Chakravarti has detected similar arrangement with some variation in Seal No. 3 of this article. See Ranabir Chakravarti, 'Maritime-trade in Horses in Early Historical Bengal : a seal from Chandraketurgh', *Pratna-samiksha*. — forthcoming.
38. *The Periplus of the Erythraean Sea* (ed. & trans.) by G.W.B. Huntingford, London, 1980, p. 55 (Section 63); *Geographike Huphegesis of Ptolemy*, (ed.) by E. L. Stevenson, New York, 1932, VII. 1. 81; Wei-Lueh, T'oung Pao, S. II, Vol. VI, 1905, pp. 551-552.
39. Rangan K. Jana, 'Tracing the Geographical location of the Gangaridai', *The Historical Review*, Vol. I (New Series), 1992, No. 1-2, p. 32.
- 40a-b B. N. Mukherjee, *The Economic factors in Kushana History*, Calcutta, 1970, pp. 37-39; 'The Periplus of the Erythraean Sea' (ed. and trans.) by G.W.B. Huntingford, London, 1980, Sections 56 and 64; 'The questions of King Milinda', (trans.) by T.W. Rhys Davids in F. Max Muller (ed.), *The Sacred Books of the East*, Vol. XXXVI, Part II, Delhi, 1965 (Reprint), p. 269, VI. 21. 360; *The Travels of Fa-Hien* (trans.) by James A. Legge, Delhi, 1971, Ch. XXXVII, pp. 100-101.
41. B. N. Mukherjee, 'Coins of pre-Gupta Bengal' in Asoke Dutt (ed.), *Studies in Archaeology*, New Delhi, 1991, pp. 281-308.

A COMPARATIVE STUDY OF THE IMAGES OF SAIVA PANTHEON IN GANDHARA AND MATHURA ART.

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A Summary

IMAGES of Siva, Skanda, Ganesa and a Devi are being discussed here. The data used comes from the numismatic as well as sculptural fields. Siva is seen on the coins of Maues, Condophares, Wima Kadphises, Kaniska, Huviska and Vasudeva. Some metallic pieces also bear his representations. He has been shown in multifaced and multiarmed forms in standing pose with or without his bull. Besides his *trisula* he carries a number of weapons like a clue, a noose, an elephant goad, a thunderbolt, a wheel, etc. In one coin type Siva is associated with Uma and Nana. In Gandhara sculptures his images have been reported from Swat, Sazma kala, Taxila, Butkara and other places. Museums at Peshwer and Berlin also have some such images. Of then the Berlin Museum figure with lateral heads of a lion and a bull is specially noteworthy.

In the contemporary art at Mathura Siva is seen either standing alone or with his pouse Parvati in embracing attitude. In a few cases his multiheaded and multi armed forms have also been seen. Siva in *caturvyuha* form seen at Musanagara has no parallel. Another unique figure of Siva in Mathura stone, of which only the detached head is now available, evinces Roman features such as small curls and a fillet running round the forehead. This pieces shows a crescent as well.

Different features of Siva seen in the images of Siva in both these schools can be corroborated with literary references from the Mahabharata and some other Puranas.

A comparative study of these different images of Siva reveal the following points of similarity and difference :

- (i) Siva's features at Mathura are peaceful, polished and gentle (*saumya*). His *aghora* faces in the *mukha-lingas* are exceptions.
- (ii) Excluding the *aghora* faces in no other figure at Mathura Siva bears moustaches on his face in some Gandhara images they are distinct.
- (iii) Siva at Mathura holds no weapons, his only attributes being a small water vase and sometimes a rosary. Even his trident appears in post-Kusana period. As against this the Gandhara Siva appears with various weapons like a trident, thunder-bolt, a noose, a wheel, a club, a battle are clasped with the trident.
- (iv) Siva in Gandhar sometimes appears holding horns of a prancing deer in one of his hands. Mathura has no such thing, but curiously enough both the prancing deer and the battle axe take a long plunge and appear in South in later periods.

- (v) Ithyphallic depiction of Siva is almost an universal feature in early art, irrespective of the fact whether the god is clad in dhoti or is altogether naked. On one hand this feature symbolizes his unfailing creative power and the deity has been termed as *urdhva retas*, *urdhvamedhra*, *nahasepha*, etc. On the other hand it suggests his pteen control over passions. The *Linga Purana*, while talking about the Pasupatas, observes that those are really naked, who do not keep their organs under control. A Pasupata yogi, though outwardly naked, is in reality, fully covered with merits like perseverance (*dhrti*), nonviolence (*ahimsa*), non attachment (*vairagya*) and pardon (*ksama*) for everybody.
- (vi) Siva's third eye suggestive of supreme knowledge is another universal feature. This supreme knowledge has been compared with fire, which destroys darkness, illusions, superstitions and false notions. This eye usually remains closed and Siva opens it only when he intends to do away with all such things. In early art Siva's third eye is horizontal in shape, but in post-Kusana ages it becomes vertical.
- (vii) In none of the Gandhara sculptures Siva appears with Parvati, but in Mathura this form ultimately leading to the famous Uma-Mahesvara-murti is present from the beginning. The couple is seen in standing pose, but the seated form has also been rarely noted. It is a mutilated terracotta figurine from Bhita, now in the Indian Museum, Calcutta (A 103080).
- (viii) Gandhara Siva has no *parivara devatas*, but they start appearing in Mathura. In some cases besides the animal mount, a bull or lion as may be the case, a pot bellied *gana* appears on the scene. In some of the Siva lingas number of the attending ganas rises to two.

To conclude comparative study of the Siva images in the two schools under reference shows that Mathura sculptors have laid more stress on showing Siva in his *saumya* or benevolent form well clad in *dhoti* and sometimes *uttariya* also. In some cases he is seen with a turban also. His right hand is usually raised in *abhaya* pose and he carries no weapons, not even his usual *trisula*. As against this in the Gandhara art Siva, more befitting to his *ghora* form has matted locks, moustaches, robust body and at times even animal faces, Even naked sometimes he is multi faced and multi armed. Several weapons are seen with him and in a few cases he carries an animal pelt on his arm. Because of this pelt perhaps the Mahabharata calls him *ardracarma-dhara*. The third eye and the erect genital organ and presence of a bull as mount are some of the common features seen in both the schools.

Skanda-Karttikeya — We have at least seven images of Skanda in the Gandhara art, the one in the Lucknow Museum should be attributed to slightly a later date. In the Mathura art we have about twenty figures of Kushana Skanda, of which one is dated in Saka year 11. The Gandhara Skanda more or less looks like a warrior and justifies his designation 'Deva-senapati'. Well equipped with an armour, and often with shoes also he carries a bow and arrow and a sword besides his favourite weapon a spear or *sakti*. His associations with a cock and a peacock are also well depicted. In one case rising, flames of fire are also to be seen behind his head. In one image from Mathura this association, which has a clear literary support, has been shown in a different way. There the two deities are seen standing side by side.

In the Mathura sculpture more stress has been laid on 'Kumara' aspect. He appears with *dhoti* and *uttariya* and always carries a spear in one of his hands. He sometimes uses a turban or appears bare headed. A cock is seen in his hands only in one case, but the peacock is absent. This bird comes on the scene only in the post Kusana age.

The Gandhara sculptures do not show any association of Skanda with the *Matṛkas*, but at Mathura he appears with the *Matṛkas* ranging in numbers from one to fourteen. This close contact of Skanda with *matṛkas* can easily be traced in the epics, *Puranas* and in some works on *Ayurveda*.

Ganapati : Ganesa or Ganapati in the Gandhara regions is to be seen only on a coin type of Indo-Bactriann ruler Hermious, but his sculptural representations have not yet been reported. In Mathura we have some early images of Ganapati, but none of them can be dated to pre-fourth century A.D.

Devi figures : In the Mathura Art we have some fine figures of Mahisa-mardini-Durga with four, six or even eight hands : in the Gandhara art we have one till now; But Prof. Tadeei has referred to a seated figure of a devi in the Lahore Museum with a bowl in left hand and an head of an horned animal in the right. On each side of her seat appear a lion (lioness?). Taddie holds that the animal head in the hands of the goddess is that of a ram and he further observes that in Gandharan period there was a goddess connected with killing of a ram, and that such goddess shared attributes with Durga. The Mathura Museum has one headless standing figure of a female divinity with a lion, but due to absence of any attributes as such, the problem of identification is uncertain.

INTERACTION BETWEEN MATHURA AND GANDHARA

R. C. SHARMA

THE two great schools of early sculptural art viz. Mathura and Gandhara originated, flourished and also disintegrated almost simultaneously. As schools of art these began in the middle of the 1st century, B.C., had their blooming phase under the patronage of the early Kushana kings from the last quarter of the 1st century A.D. to the 3rd century A.D. and both suffered heavily and almost finished as effective art styles due to fierce attacks of the white Huns and other forces from 5th to 7th century A.D.

While qualitatively Mathura continued to ascend upto the end of Gandhara idiom lost its glamour just after the fall of the mighty Kushan rule in the third century A.D. Gandhara seems to have based itself mainly on the royal patronage, hence it became difficult for the ateliers to sustain after the political turmoil. On the other hand, the Mathura school was mainly supported by the society itself particularly the wealthy merchants, officers of high rank and monks and devotees. Thus even after the disintegration of the Kushana rule the artists continued their work. Of course, the export of products decreased due to less demand from distant quarters in the post-Kushana epoch but this loss was well compensated by the improvement of quality and we have several outstanding specimens of the Brahmanical, Buddhist, and Jaina pantheons in the Gupta period. Inspired from its counterpart at Mathura, Gandhara tried to recover in the late 4th and 5th century and a large number of fine works came out of the workshops both in stone and stucco.

While the Mathura studios were unconcerned with the creed or sect, the Gandhara sculptors had a great fascination for the Buddhist theme and the other deities are only casually seen. The Mathura school used the locally available stone *i.e.* the spotted red sand stone but the Gandhara artists first chose the local variety of stone *i.e.* the schist or slate stone and subsequently switched over to an easier medium of stucco.

The Mathura school was concentrated in a small region with headquarter in the city itself. Sometimes the services of well known artists were commissioned outside also, although they preferred to work at their ateliers. On the other hand the Gandhara school was spread in a large region and had different off shoots. Consequently, despite some variations the Mathura art style is compact and integrated while the Gandhara school has various regional peculiarities. At the same time the Mathura school even after bearing and absorbing several alien trends looks uniform in exposition but the Gandhara style presents somewhat complex picture with Hellenistic Roman, Iranian, Bactrian and Indian influence. Sometimes one trend is overdominating and in other cases it is obscurely mixed.

A good number of Mathura sculptures bears the year and specified date of consecration, and it has been possible to frame a reasonably correct chronology of Mathura art. But surprisingly despite their close association with west the Gandhara artists did not bother for recording the dates and so only eight far dated Gandhara sculptures are known to us and three of these are in the collection of

the Indian Museum, Calcutta. The problem of identification of era used is more complex in Gandhara in comparison to Mathura. All these factors have led to the uncertainty of dating of the Gandhara art.

Both Gandhara and Mathura regions were included in the Kushana empire. One important western metropolis was Purushpur (Peshwar) which was also known for sometimes as Kanishkapur after the name of the great king. The metropolis of the vast kingdom in east was Mathura. It was but natural that the two great styles developing contemporaneously in different regions came in close contacts with the fast political and social movements. The doors of such intermixing were already open and we have the references of Gandhara region and its people in the Vedic and Epic literature. The great grammarian Panini of the 6th-5th century B.C. belonged to this country. We, therefore, find the cultural and political links already established with Gandhara and this intermixing is not confined to the Kushana period. Such glimpses are testified by some early archaeological finds also. But here we are concerned with the interaction of the two schools of art and this seems to have begun towards the end of the 1st century A.D. or beginning of the 2nd century A.D.

Since the Buddhist pantheon was common and popular in both the schools we shall mainly deal with this aspect to analyse the process of interaction. There has been a good deal of debate on the basic issue of the origin of the Buddha image and the scholars are divided into two camps, one favouring Mathura and the other siding with Gandhara. There are strong arguments in favour of each and the present author has discussed this problem in detail elsewhere. But the fundamental point is that the essential requirements of the Buddha figure either in Gandhara or Mathura have no significance in the Greek, Roman, Iranian or Bactrian art traditions which have direct bearing on the Gandhara school. The *Nasagrardrishti*, *Dhyana*, *Padmasana*, *Simhasana*, *Urna*, *Ushnisha*, celestials showering flowers, flywhisk bearers etc. are associated with a *Yogin* or *Chakravartin* in Indian traditions. As such Gandhara must have been on the receiving end for the evolution of the Buddha image and the only place which could contribute to this great event was the eastern metropolis Mathura which had long religious, spiritual, philosophical, literary and artistic background even before the inception of the Gandhara school of art. For canonical interdiction Mathura Buddha figures were sometimes recorded as Bodhisattva, but the Gandhara school did not have such compulsion.

The early seated Buddha/Bodhisattva images of Mathura carved upto the end of the reign of Kanishka do not bear any Gandhara impact. Their salient features are : high relief, nimbus with scalloped border, back slab with foliage of the Bodhi tree, celestials on the upper back slab with flowers, two flanking acolytes with flywhisk, top hair of the Buddha shaped like the snail shell, right hand raised in *Abhaya*, left hand resting on the left thigh or knee, shaven head, *Urna* between the eye brows, almond shaped wide open eyes, small earlobes, slightly smiling expression on the face, left shoulder covered with garment and thick pleat on the upper arm, legs crossing each other in *Padmasana*, soles of feet marked with auspicious motifs, lower garment covering half legs only, frill of this cloth falling on the seat, deep navel, prominent chest, rather stiff posture, corpulence effect of *Yaksha*, seat fabricated as an alter with ridges, lions supporting the seat, or an object of worship with devotees or donors. The famous image from Katra (Mathura Museum No. A1) can be cited as the best example of this group.

The early standing Buddha/Bodhisattva are noted for the following characteristics : the left hand held akimbo resting on the waist lower garment reaching below the knee with its hent on the left hand, the waist terminating into a double knot with two fillets hanging on the thigh, the thin cloth with

transparent effect a bunch of flowers or knot of hair or a lion between the two legs. The colossal statue of the Bodhisattva of year 3 of Kanishka installed at Sarnath is an important representative of this group.

These statues represent the pure indigenous rendering and no Gandhara impact is noticed. It is quite likely that the Gandhara school was in its infancy and it took some time to establish itself and to impress others. After about three decades the Buddha figures seem to experience some novelities which are somewhat unfamiliar to the native traditions. These are seen in the Delhi Museum statue No. L. 55-75 are : One attendant holds a thunderbolt in the right hand (Vajrapani), he wears a short pant (Udichyavesha), he also wears buckled scarf round the neck, the turban has criss-cross motif. Beside the drapery and neck ornament has physiognomy looks non-Indian. The presiding deity does not convey a feeling of natural peace as reflected in the case of earlier icons. The legs suggest rather upward trend which makes the figure somewhat uneasy. Additional thick pleats on the left shoulder is also a new feature. This has concealed the transparent effect of garment and a beginning is made to provide somewhat thick cloth. We are well aware of the fact that the region of Gandhara was known for fine quality of woolen blanket.

The image unearthed at Ahicchhatra is dated in the year 32 (A.D. 110) which falls in the early reign of Huvishka the successor of Kanishka I. This seems to be the first Mathura product clearly bespeaking the first stage of romance with its counterpart Gandhara. Prof. Van Lahuizen thought that the affair began in the year 51 with the statuette from Anyor (Mathura Museum No. A.65). She observes 'During the reign of Huvishka, however, is a great revolution in the style of Mathura. This change is caused by a strong influx from Gandhara probably due to the fact that the art of this country had by this time risen to such a height that its products passed the borders and drew the attention of sculptors from other parts of India. The result of this can clearly be seen for instance in the Buddha images at Mathura'.

While the assessment of Prof. Lohuizen is justified we feel that this influence has different stages and she missed this development due to paucity of material available to her. The second stage is marked by the following peculiarities : the drapery covers both the shoulder, the feet of the presiding deity are covered with garment, the broad pleats after covering the feet fall in a semicircular fashion, the left hand is now raised up for holding the hem of the drapery and is almost parallel to the right hand which is in Abhaya, the left elbow does not rest on the knee and the upper garment forms a semicircular 'V' shaped pattern round the neck. The representative specimens are a) headless seated figure in the Lucknow Museum (No. B. 14 and b) standing figure in the Mathura Museum (No. A. 4). While no dated sculpture of this stage has been acquired it may be concluded that the phase had a brief spell of about twenty years between dated/figures from Ahicchhatra of year 32 (A.D. 110) and from Anyor of the year 51 (A.D. 129)

The third stage of development is marked by the furtherance of the Gandhara impact which displays these trends : the garment is coarse with thick pleats and a rib effect, but somewhat transparent effect is retained, a triangular shape is formed on both sides at the shoulders by wearing of the robe, the right hand which in earlier statues was in profile now becomes frontal, snail shell fashion of hair is replaced by the rows of notches of semicircular scratches, the Dhyanamudra appears for the first time, the lions on the pedestal give a frontal appearance and are often standing and the flanking acolytes generally disappear.

The Buddha figure from Anyor dated in the year 51 (A.D. 129) of the Mathura Museum (A.65) is the best citation in this category.

The fourth stage of contact of Mathura with Gandhara is noticed in the culmination or a free adoption of the Gandhara traits in Mathura with these additions : the drapery becomes more stiff and thick with broader folds, the rib effect is replaced by the shutter effect, a control or master pleat is formed at the elbow from where the lower pleat is seen covered by the upper one, a 'V' shaped scarf seems to have been added round the neck, the folds suspending from the left shoulder are gathered to the right side and the frill of the garment on the pedestal takes the shape of the cushion.

The best examples are a) Buddha from Govindnagar (Mathura Museum No. 76.69 and b) Buddha in the Lucknow Museum (B. 5).

Subsequently, the Mathura products show somewhat different features viz. the shutter drapery becomes fan shaped on the right side, the 'V' shaped space below the neck is roundish and a cushion of *Kusa* grass covers the pedestal. A yellowish figure of the Buddha from Sravasti (Lucknow Museum No. 66.183) and lower part of the Buddha image dated in the year 93 (A.D. 171 Mathura Museum No. 76.1) are notable specimens.

The harmony in relations between schools of Mathura and Gandhara continued for about three generations and then started a feeling of disgust and repulsion for the dominating alien features. In the last quarter of the second century A.D. old fashion reappears. The drapery becomes relaxed and light, giving away the rib or shutter treatment. Snail shell of hair, *Ushnisa*, bare feet, and *Padmasana* also return. The recycling of the indigenous trends gained further momentum with the decline of the Kushana power. The Buddha image from Govindnagar now in the possession of the Archaeological Survey of India is a beautiful specimen announcing the retreat of the Gandhara idiom. There are several other statues with the Mathura Museum which bespeak the same phenomenon (Mathura Museum No. 42.2919, 76.33, 76.21, 76.18 and 46.3231).

There are some dated Mathura Buddha figures with Gandhara impact but these do not comfortably fit in our frame of chronology. These have been discussed by scholars like Van Lohuizen, J.M.Rosenfield, B.N.Mukherjee and G.S.Gai with different options and explanations. We have scrutinised these theories elsewhere and offered our own suggestions and possibilities to solve such controversy of date and style and it is not proposed to furnish such details here.

The post-Kushana phase of the Mathura school continues of process of reverting to the original form with these changes : rejection of Gandhara influence, resurgence of transparent drapery but retaining the folds, also experimenting the foldless drapery, serene expression on face, horizontal shaping of eyes, tendency of elongation of earlobes, curly hair, slim body, clear and elaborate carving of halo and concentration on refinement in carving. Some of the notable examples of this phase of transition (between the 3rd and 4th century A.D.) are standing Buddha of the year 230 in the Lucknow Museum (B.10), statue from Govindanagar with foldless robe (Mathura Museum No. 76.26) and the seated Buddha from Bodhgaya dated in the year 64 (Indian Museum, Calcutta No.).

Beside the Buddhist images the Gandhara influence is noticed in the Brahmanical sculptures where the Scythians in Udichyavesha are seen worshipping the Sivalinga, Surya clad in the same fashion, attendant of Kubera, Bachas or Silenus in drinking scenes, Herakles and Nemean lion,

sculpture showing Kesibadha (Mathura Museum No. 58.4476). The tirthankara images do not furnish elaborate evidence as they are nude but the carving of pedestals, position of lions and some devotees bear unmistakable Gandhara influence. Drinking goblets as depicted at Mathura and Sanghol is a Gandhara item.

The other area of Gandhara influence on Mathura is the royal portraiture. Life size of heroic size statues of Vima Kadphises, Kanishka and Chasthana were recovered from the mound of Tokri or Itokri at Mat and 12 km. to north of Mathura city. It has been mentioned as *devakula* in the inscriptions, probably for the fact that the Kushana kings used the epithet of Devaputra and the place where their statues were installed was called as *Devakula*. Scholars like S.K. Saraswati opines that these portraits may not be the products of Mathura art as these are strikingly overwhelmed by the alien trends. This is of course a debatable issue and we have the earliest tradition of *Devakula* or *Alekhyagriha*. Resembling the so called European sitting posture as seen in the case of Vima Kadphises, we have the earlier inscribed image of Yakshi Layava from Nagla Jhinga, Mathura Museum No.72.5 datable to the 2nd century B.C. Similarly, about the lion throne we are reminded of the Chakravartins who are supposed to sit on *Simhasana* and the Sakyasimha Buddha who belonged to the royal family was also provided with the lion throne as his seat in the Buddha images. Thus every element is not alien, of course this impact is conspicuous on garments, shoes with embroidery work and weapons worn or held. It may be conjectured that the Mat royal portraits were the outcome of the joint venture of Mathura and Gandhara sculptors who were probably also associated with the carving of other *Devakula* images at Surkh Kotal near Kapisa and Balkh in the greater Gandhara region.

The Mathura sculptures unearthed in 1985 at Sanghol in Ludhiana District of Punjab do reflect several Gandhara traits in dress wavy hair style of the Buddha, pseudo-Corinthian pilasters etc. It has, therefore, been suggested that it was a meeting place of Gandhara and Mathura schools.

The Mathura school also influenced the Gandhara sculptures. although the workshops of Mathura were localised in small region but the products were in great demand in distant quarters of Indian sub-continent and these were taken to the Gandhara region as well. Jataka narrations, curly hair, lotus seat, drapery covering one shoulders only, *Abhaya* pose, monks with *dhoti* and *shawl*, ladies wearing *sari*, lion throne, railing pattern, *Salabhanjika*, Brahmana ascetics wearing sacred thread (*yajnopavita*) several auspicious motifs or symbols, particularly lotus, wheel and *triratna*, half or full lion used as supports for doorjamb etc., elephants, peacocks, *Garuda* with human ears and ear rings, lady with parrot perched on shoulder, four or five rectangles of diminishing size arranged one over the other (*Panchapattika*), lotus creeper, wheel on palm etc. These features are noticed on numerous sculptures hailing from different sites but it is not possible to form a convincing chronology to discuss them in a sequence.

On the other hand the large number of ivory objects recovered from Kapisa (Begram) bear an unmistakable imprint of Mathura sculptures. The ivory specimens could not withstand the adverse climatic conditions at Mathura but remained in tact in the emporia at Kapisa. We come across the well established ivory trade guild from the Sanchi Gateway epigraphic record.⁴¹ It appears that the beautifully carved light objects of ivory were taken away from Mathura as souvenirs by the visitors coming from western region. When these became very popular the emporia of Kapisa started selling them. Kapisa

was famous for excellent wines and Kautilya has also recorded this fact in his Arthashastra. We therefore have some drinking scenes in the Mathura sculptures.

A Surya temple was exposed at Khair Khaneh about 20 k.m. to north of Kabul. Datable to the 4th century A.D. the deity sits in the squatting pose with his attendants Danda and Pingala. He is drawn in a chariot of Aruna without legs. This image is to be compared with the earlier Surya images of the Kushāṇa period from Mathurā. There is a good deal of similarity in the architecture of Khair Khaneh and the Siva temple of Bhumara in Madhya Pradesh.

The stucco sculptures in the ancient palace at Termez on the north bank of the Oxus river bear the figures of Kamalata and Mithunas which seem to have been derived from the Indian concept of Kalpalata, Kalpavriksha and the source must have been the early Mathura sculptures.

In the hall of fortress at Gyaaur Kala in the vicinity of Khwarezm are seen the pillar bases and identified as Kumbhakas recovered from the Huvishka monastery.

Stone images of Devi, Sri, Lakshmi and Bhu have been found in the Gandhara region. But these are subsequently superseded by the cult of Hariti which became very popular. Similarly, among the male deities Brahma, Indra, Siva, Surya, Chandra and Kartikeya, occasionally seen in the sculptural renderings in Gandhara must have been inspired by the Mathura school where the plethora of early divinities outbroke. The square tablets excavated at Taxila and termed as *Ayagapatta* by Marshall and toilet trays by Lohuizen must have been derived from the Mathura *Ayagapattas*. A deity standing on *makara* on the entrance of a shrine at Jaulian has to be identified as Ganga.

While the origin of Buddha image was discussed unconclusively several times, the scholars generally accepted the view that the Buddhist pantheon developed in Gandhara. But now we have an excellent pedestal inscription from Govindnagar, Mathura dated in the 26th year and also recording the name of Huvishka (*i.e.* his first regnal year) that an image of Amitabha Buddha was consecrated. This new evidence shatters the earlier non-Indian or Gandhara origin of the Buddhist pantheon and we may safely conclude that this also emerged at Mathura and later fructified in the land of Gandhara.

The Gandhara impact on Mathurā has been studied in detail but due justice has not yet been done to the Mathurā school influencing the Gandhara style. The reason seems that Mathurā being more compact, localised and accessible did not pose these difficulties as faced in studying the Gandhara remains produced in vast region in different places under various influences and now scattered in numerous places under diverse control. Political and geographical factors have also been responsible for non-fulfilment of this task. Let us hope the hindrances will be overcome and a better picture of interaction will emerge.

MATHURĀ IMAGES OF GAṆEŚA IN THE INDIAN MUSEUM

MANGALA CHAKRABARTI

MATHURĀ proves itself a unique centre where early form of almost all the icons of three main religious sects of India including the cult icons had taken shape. This is an evidence of eclectic nature of the city.

Popularity of Gaṇapati, Lord of gaṇas (the 'troops of demi god's attendants of Śiva) or Gaṇeśa in Mathurā is testified by the findings of icons of the deity. Formerly it was believed that the cult of Gaṇapati (or Gānapatya) was comparatively late development. R.G.Bhandarkar holds the view that this elephant-headed and pot-bellied god came to be regularly worshipped after the late Gupta age as there is no mention of Gaṇapati and his worshippers in any of the Gupta inscriptions.¹ The description of the image of Gaṇapati in the chapter on *Pratimālakṣhanam* in the *Bṛihat-saṃhitā* seems to be an interpolation.² Though we have scanty references, Foucher believes that the definitive creation of Gaṇeśa's type took place towards the beginning of the Christian era.³ In the sculptures on the western gateway of Sāñchi (later half of the 1st century B.C.) the army of Māra includes an elephant, a boar, a buffalo, a goat etc. But these are mere animal forms. A prototype of Gaṇeśa is represented in one of the Amarāvati railings (c. 1st century A.D.) where one gaṇa is seen with elephant-head (though trunk and tusks are missing)⁴. It is regarded as the transitional form of Gaṇeśa. A similar type of frieze of the stupa found near Mihintale in Ceylon⁵ shows an elephant-faced gaṇa seated with attendant gaṇas facing him. A Mathurā frieze of the Kushāṇa period also shows five elephant-headed gaṇas similar to the Amarāvati relief.⁶ There is no doubt that iconographic features of this pot-bellied, elephant-headed god might have been derived from the characteristic traits of the Yakshas and Nāgas in Indian art.⁷

Scholars are convinced that the image of Gaṇeśa found from Mathurā is the earliest and archaic of its kind so far discovered⁸ and various representations of the god are seen in the Mathurā school of Art. Mathurā collection of the Indian Museum shows some of the figures of the deity in stone. Of the three independent statuettes of Gaṇeśa preserved in this museum two are positively of early date. Two armed figure of Gaṇeśa (fig. 1) is carved in relief against a rectangular simple back-slab. Lower portion of the deity from the abdomen is missing. The image is marked for its large fan-like ears covering entire head upto the shoulders. The deity is much defaced due to erosion. It seems a bowl of cakes is held in his left hand and the position of the right hand is not clear. His thick turnk with a broad curve is turned to left and is lifting the sweets from the bowl. The deity is devoid of ornaments and he has no crown on its head. Only traces of a pearled necklace are seen.

The figure can be compared to the image of Gaṇeśa in red sandstone found at Sankisa⁹ in the Fategarh district of U.P. On stylistic ground the Sankisa image is assigned to the Kushāṇa period. The present statue shows a more archaic representation of the god.

The second statuette (fig. 2) represents a pot-bellied two armed figure of Gaṇeśa seated in *sukhāsana* against a simple rounded back-slab. The deity is also shown without jewellery and crown. The proboscis of the god is turned to left over the bowl of cakes probably held in left hand which is defaced. The pose of right hand is not clear. His thick set and corpulent body is more akin to the Yaksha figure.

The four armed figure of the god (fig. 3) belongs to a comparatively late period. He is seated in *mahārājājalāsana* wearing usual ornaments : pearled necklace, armlets, bracelets and jewelled crown. His upper right hand carries a *sarpa* (hooded), the upper left hand probably grasps an axe while the normal right hand of the god probably rests on the right knee. The trunk turns to left and is lifting the cakes from the bowl. Third eye of the deity is present and round nimbus with pearled border is visible.

Besides these independent figures of the god, he is depicted as the accessory figure to other deities. Gaṇeśa is seen in the marriage scene of Śiva-Pārvatī where he is represented dancing at the side of Pārvatī (fig. 4). He appears standing in the syncretistic icon of Hara-Pārvatī and Viṣṇu (fig. 5). Both of the icons belonged to a late period.

Another unique and interesting representation of Gaṇeśa is seen in a triad with Lakṣmī and Kubera (fig. 6). The buff sandstone statuette is carved in relief with a measurement of 11cm.×19cm. The goddess Lakṣmī is seen seated in the middle. Gaṇeśa appears seated on her right while Kubera is shown on her left side. The three deities are represented in *sukhāsana* on the same platform having a simple rectangular back-slab. As the icon is defaced the hand posture of the deities is not legible but undoubtedly all of them are two armed. The goddess is flanked on each side by an elephant standing probably on lotus and pouring water on her head.

Lakṣmī is described as the consort of Gaṇeśa in the later texts like *Aṁsumadbhedāgama*, *Uttarakāmikāgama*, *Viṣṇudharmottara*, *Rūpamaṇḍana* etc. On the other hand Kubera (Yaksha) and Gaṇeśa typologically are related by their grotesque dwarf figures which spring from a family. Thus it appears that characteristically and typologically three deities are interlinked with each other. It is also evident from their identical pose, posture and the representation in a single compartment that they held equal status. They are considered as the bestowers of wealth (Kubera), success (Gaṇeśa also called Siddhidātā), and prosperity (Śrī or Lakṣmī). It seems that the triad is the representation of a unique concept of cult image worshipped by the merchantile community of Mathurā. The image seems to belong to the age of the Kushāṇas under whose rule Mathurā went on as a prosperous, wealthy and flourishing centre of trade.¹⁰

In this connection mention may be made of a similar type of icon seen in the University Museum, Philadelphia.¹¹ The image is ascribed to the eighth century A.D. Coomaraswamy tries to identify the goddess as Śrī or Abhisheka Lakṣmī who herself is receiving the *abhisheka*. But A. Getty, on the basis of a triad with Gaṇeśa in group, found in Java is inclined to indentify the goddess as Guhyeśvarī the patron goddess of Nepal¹² instead of Śrī-Lakṣmī. He justifies his view by relating Gaṇeśa with Pārvatī i.e. Guhyeśvarī. But it is evident from the present icon that the central deity is no other than Gaja-Lakṣmī or Śrī-Lakṣmī.

REFERENCES

1. Allahabad Pillar Inscription of Samudragupta refers to the name of king Ganapatināga whom he had exterminated, (Fleet. *Corp. Ins. Ind.*, iii, pp. 6ff.; Prof. D. C. Sircar, *Select Inscriptions*, vol. i, 2nd ed., Cal., 1965, pp. 262ff.)
2. R. G. Bhandarkar, *Vaishnavism Saivism and Minor Religious System*, Strasburg, 1913, pp. 148-50.
3. Foucher's Introduction to Getty's *Ganesa*, Delhi, 1971, p. xix.
4. A. K. Coomaraswamy, *Yaksha*, N. Delhi, 1971, pt. I, pp. 7, pl. 23, fig. 1.; J. Burgess and G. Buhler, *The Buddhist Stupas of Amaravati and Jaggayyapeta*, London, 1887, pl. xxx, no. 1.
5. A. Getty, op. cit., p. 25, pl. 22, c.
6. V. S. Agrawala, *Studies in Indian Art*, Varanasi, 1965, p. 189.
7. J. N. Banerjee, *Development of Hindu Iconography*, Cal. 1956, p. 356.
8. Foucher, op. cit., p. xix; A. Getty, op. cit., p. 26, pl. 2, a; V. S. Agrawala, op. cit., p. 189.
9. A. Getty, op. cit., p. 26, pl. 2, a; Stella Kramrisch, *Manifestations of Siva*, Philadelphia Museum of Art, (Philadelphia, U.S.A.), 1981, p. 75, pl. 61.
10. Prof. B. N. Mukherjee, *Mathurā and its Society*, Cal., 1981, chapt. v, pp. 97-195.
11. A. K. Coomaraswamy, *Yaksha*, 1971, pt. ii, pl. 8, fig. 1.
12. A. Getty, op. cit., pp. 33, 59-60.

A PAIR OF JUGATE RELIEFS FROM KHAJURAHO THEIR ARTISTIC AND ARCHITECTURAL SIGNIFICANCE

S. P. BASU

THE Khajuraho temples embellished with beautifully modelled sculptures can simply be described as a lyric in stone. Literal qualities like implications (*vyañjanā*) and puns (*ślesha*) can be traced in them. Dr. Devangana Desai has very rightly observed that the architect of the Khajuraho temples 'puts conjoint (*sandhi*) figures on architectural junctures (*sandhi ksetre*) and puns thereby.'

The jugate reliefs under review have been put on the eastern and western portions of the southern facade of the sanctum sanctorum of the Kandariya Mahadeva temple at Khajuraho, M.P. Both the jugate reliefs are put slightly above eye level in such a way that the viewers, while circumambulating the sanctum within the main temple, clock-wise, can easily find them on the southern facade – the first one on his right and the second one on his left side. Since these compositions are placed on the southern facade and the male figures are modelled in porfiles, they are shown standing erect and facing east. It will be interesting to note that the sanctum sanctorum is also facing the east. The female figures are shown facing west and standing face to face with their male counter parts in jugate posture in three quarter back view. The male figure in the first composition is shown standing erect. (Pl. I). The female figure in this composition is standing in jugate stance. But the lower limbs of the female figure are multiplied. That is to say, this is modelled with two hips and two pair of legs – one pair is on the ground to make her standing erect in jugate while the other pair of her leg in twisted stance to suggest her approach to her man through a gentle leap and then her action of standing jugate with her male counterpart. Thus two types of movement of her body have been suggested in a single modelling through multiplication of her lower limbs that gives effect of a movie in stone. The relief may be dated to the 11th century A.D. In the absence of a good photograph of the relief of 1961-64 stages (in the latter stage in 1987, the twisted portion of second pair of legs was broken) of preservation, the relief is illustrated through sketch in (pl. I). The second *mithuna* composition of the similar type has been put on the western portion of the southern facade, of the same Kandariya temple. This second composition also shows the male figure standing in erect stance and the female one standing in jugate posture face to face to her male counter part with her additional legs and hip in somewhat different stance from that of the first one. This second *mithuna* composition though in mutilated condition is in the same state of preservation from 1961 (when author first noticed it during his stay as Curator) to 1987 (when the author went to Khajuraho for attending the seminar on 'Art of Khajuraho'). In order to have a better and closer view of the composition, the relief has also been illustrated with the help of a sketch (pl. II). In the sketch, besides two standing legs of the female figure, one toe of additional left leg is seen, (though the photograph has missed the toe because of the difficult angle from which the photo has been taken). These modellings are produced by the artists neither by whims nor by fluke. That this movie type of sculptures belongs to a long art-tradition of India is corroborated by the finding of another similar type of relief in terracotta (different medium) panels one on the facade of Krishnapura terracotta temple in Hooghly district of West

Bengal (difference of more than 1000 kms) and the other on the facade of another terracotta temple at Dasghara also in the district of Hooghly, West Bengal. The terracotta temple in the village Krishnapura is dated as 1762 A.D., the other one is also dated in the same century i.e. 18th century A.D. (c. 700 years away from Kandariya Mahadeva temple at Khajuraho). The panel (pl. I) depicts *Bhagavat Purana* legend of humbling down the ego of Brahma by Lord Krsna (Book X, chapter- XIII). Brahma with a view to testing the power of Lord Krsna pilfered the calves and cow-herd boys from the grazing ground and kept them concealed in nearly caves for one year. Krsna understanding the foul play by Brahma produced the same calves and cow-herd boys from his own self and engaged himself in sporting with them as usual. After one year Brahma found the same boys and the calves playing with Krsna. Then understanding the greatness of Krsna, Brahma surrendered to him. The legend has been beautifully illustrated by both the Krishnapura and Dasghara terracotta panels. They show Brahma with one lower part and two upper parts standing in front of Krsna who is standing erect. Brahma's one upper part is shown with folded hands holding also two ends of a scarf coming down from his neck (*galavastramudra*), while his second upper part is shown bowing down at the feet of Krsna. Both of Brahma's above actions are focussed in a single panel with the help of two upper parts suggesting a movement in his upper part bringing an effect of movie in terracotta. The cow-herd boys and the calves are shown in small squares signifying the caves. Thus the tradition of showing movement of a particular limb by multiplication of that limb in Indian Art has a basis of wide range of time and space.

This art tradition of depicting movement of a particular limb by multiplication of that limb is probably referred to in the legend of Brahma's incest with Savitri in chapter-III of the *Matsya Purana*, dated as belonging to the 3rd-4th century A.D. as referred to by Dr. R. C. Hazra in his 'Puranic Record of Hindu Rites and Customs', p. 32. The legend runs thus: after creating Savitri, Brahma was fired with love at the sight of enchanting beauty of Savitri. Brahma's four heads sprang up one by one as Savitri was circumambulating him with reverence with a view to seeing her from all sides. At the sight of this multiplication of heads of Brahma in this manner, Savitri or Satarupa went upward and the fifth head of Brahma sprang at the top of his four heads which he covered with his long matted hair. Thus the idea of multiplication of heads with the movement of Savitri having an effect of concept of movie appears in the literature of the 3rd-4th century A.D. If we agree with the view that artistic representation is always followed either by Sastric injunction as a course of regularisation or by literary references, following the dictum that language is always followed by grammar and not vice-verse, expectation of finding such type of sculptures with multiplication of a particular limb to suggest movement of that limb even earlier than the 3rd-4th century A.D. cannot be ruled out. Thus the artistic significance of the above Khajuraho sculptures lies in the fact that this type of movie modelling belongs to a well established long art tradition of India.

If Dr. Devangana Desai's observation is true, the placement of the reliefs on the southern facade of the *garbha griha* must bear some significance. Each male figure in both the relief faces east because of their placement on the southern facade. The sanctum sanctorum of the Kandariya Mahadeva temple also faces the east. Thus we may take the male figures in erect posture in both the reliefs as representing the sanctum sanctorum itself. The female figures in the reliefs with their two hips and two pair of legs may represent the portions of *mahamandapa*, *mandapa*, *ardhamandapa* together and the jugate stance of the male and female figures standing erect face to face their male counterpart (i.e. female figures facing west) may represent the above three architectural portions of the temple joined together with the

sanctum sanctorum, while the *antarala* portion may be represented by the space between the faces of the male and female figure in jugate stance. The whole composition may represent the homogeneous unit of the whole Kandariya Mahadeva temple. The profile line from the head of the female figure to her heels of the upper twisted legs forming a line of crescent represents the same line of crescent formed by the line starting from the top of the *antarala* to the top of the *ardha-mandapa* touching the *sikharas* of the *mahamandapa* and *mandapa*. This point will be clear from the plate (V) where we superimpose the photo of the *mithuna* figure over the view of elevation of the temple. The female figure with two hips and one pair of twisted leg and another pair of leg helping the figure standing erect in jugate with the male figure implies on one hand, movement in the female body and on the other hand architecturally signifies that whole of the frontal portion of the sanctum sanctorum has separate independent entities and then in the hand of the architect of Khajuraho it merges with the sanctum sanctorum to impart a compact homogeneous beauty to the whole architecture. Thus Shri Narayan Sanyal, the leading Civil Engineer and famous Bengali novelist has observed that in architectural planning, the Khajuraho artisans preceded the Kalingas in arriving at the conception of four-temples in one axis. Thus the temple architecture at Khajuraho is attuned to this duality— the portion comprising *ardhamandapa*, *mandapa* and *mahamandapa* conceptually being a female having been joined with sanctum sanctorum thought to be the male counterpart on the same longitudinal axis which is implicated by the very placement of the interesting jugate compositions on the southern facade of the sanctum sanctorum of the Kandariya temple.

REFERENCES

1. Dr. Devangana Desai, '*Puras and international language at Khajuraho*' in Kusumanjali, p. 83, ed by M. S. Nagaraja Rao.
2. The author took notice of the above figures during his stay at Khajuraho as Curator from 1961 to 1964. Then he has published this figure in his book, '*The Concept of Brahma*', Delhi, 1986. Then after 23 years during his last visit to Khajuraho in 1987 to attend the seminar on 'Art of Khajuraho' he was shocked to find that the additional pair of legs in twisted stance was chopped off from the female figure leaving a suggestive mark only. The author communicated this article in that seminar.
3. Shri Narayan Sanyal, '*Erotics in Indian Temples*', Calcutta 1984, p. 109.

ACHEULIAN AND POST-ACHEULIAN SUCCESSION IN WEST BENGAL

ASOK DATTA

Introduction

The name Acheulian has been derived from St. Acheul, a suburb of Amiens in France. One of the most alluring tool types of this cultural complex is handaxe which was found in use for about a million years over one third of the old world. The shape varies from pear, ovate, triangular, cordate, Lanceolate and transitional forms between them. They are often described as "all purpose tools". But all theories regarding its actual function are often fraught with contradictions. The earliest handaxe has been dated to 1.3 million years old while its vertical sequence does not confirm any evolutionary change with time (John Wymer, 1982). In fact, the best symmetrical forms have been found mixed with crudely chipped handaxes. The other diagnostic tool type of this cultural phase is cleaver which has always a broad cutting edge. The cleavers are highly specialized tools and were meant for specific purpose. The cleavers are found to be present during the later part of Acheulian culture and were mostly confined to Africa and India.

In India, an advanced Acheulian industry with its diagnostic handaxe / cleaver complex is supposed to have appeared during the middle pleistocene period roughly corresponding to III glacial phase of pleistocene period with a substantial amount of regional diversity. This may broadly be placed between 250,000 to 200,000 years B.P. Regarding the origin of this culture, Banerjee (1987) has suggested that "Acheulian was a distinctly immigrant culture". In view of the changing situation due to extensive prehistoric research in India for the last three decades, it may be confirmed that we do not have any separate stage of chopper / chopping complex as suggested earlier by many scholars on the basis of Soan and other similar findings. Now it is customary to regard chopper / chopping tools as constituent elements of Acheulian culture. Regional diversities are found mainly in the form of raw material, and differential percentage in the distribution pattern of major tool types.

West Bengal

The south western region of this state broadly having identical geographical and environmental features provide a new set of ecological backdrop for Acheulian migration during the upper part of middle pleistocene period. The chopper / core tradition of Burma, Malayasia, Vietnam and Indonesia did not penetrate into the border of Assam perhaps due to natural barriers like Arakan range. However the handaxe / cleaver complex of peninsular India found its maximum extension upto West Bengal. In fact, the handaxe-cleaver complex of West Bengal is an integral part of the total Acheulian process of India. The Acheulian handaxe / cleaver industry is found to be present in West Bengal with certain amount of pebble choppers. The Acheulian was basically a handaxe / cleaver industry. So, this phenomenon seems to be highly localized in character, and strictly confined to south western Midnapur region. For

example, in Susunia, the handaxe / cleaver complex constitute 78% of the total assemblage while the pebble choppers from Suvarnarekha constitute only 25% of whole assemblage (Datta, 1985). Moreover in all the areas, handaxes constitute more than 55% in the total assemblage. Despite substantial amount of pebble choppers found from Suvarnarekha basin, the basic character of the lower palaeolithic industry in West Bengal remains Acheulian as a whole with its diagnostic handaxe / cleaver complex. A sample survey reveals that out of 5800 lower Palaeolithic tools collected so far from different parts of West Bengal, handaxe / cleaver constitute 4000 specimens which alone speaks of the predominant character of the lower palaeolithic industry.

The origin of the Acheulian in West Bengal remains uncertain as the earlier stages of its development are found to be absent, although Singhbhum has been suggested by Ghosh (1978) as the possible area of such development. He further suggested that neighbouring areas of Singhbhum served as marginal areas. It seems to be largely over simplification of the term diffusion and say that the Acheulian complex developed in Singhbhum and later diffused in the neighbouring areas specially in the context that no earlier stages of its development has been recorded in Singhbhum as it has been documented in east Africa specially Olduvai Gorge. The hypothesis of Ghosh in this regard can not be accepted as it does not contain valid reasons for such migration. Considering the nature and character of the Acheulian complex in India specially in terms of morphology, distribution, raw materials, technology and other related matters, one cannot accept the theory of multi-linear development of Acheulian culture in India. In this connection Banerjee (1987) has rightly suggested that the genesis of both the Soan group of industry as well as the Acheulian complex must have had somewhere outside the Indian sub-continent. But so far West Bengal is concerned, the early hominids entered into the state from two directions viz. Bihar and Orissa.

The distribution of Palaeolithic sites in West Bengal are found to be concentrated over the compact area of the state covering the districts of Bankura, Purulia and South Western Midnapur (Datta, 1985). The basic tool types of all these areas are handaxe, and cleaver while chopper is negligible and remains localized in Suvarnarekha and adjoining region. An advanced Acheulian culture with unmistakable influence of cylinder hammer technology is found to be present in association with few crude tools in West Bengal. The presence of crude tools indicate the application of free flaking technique. The best evidence of such technique is found on unifacial choppers and crude and massive handaxes. The handaxes in the State mainly comprise ovate, almond, triangular, cordate and lanceolate types while cleavers are either having oblique, concave, convex or straight cutting edges with U or V shaped butt end. The cleavers in this State display a strong element of African vane technique. The flake element of the handaxe-cleaver complex in the State became, in course of time, a dominant and formidable character of the industry. This flake elements of Acheulian culture show a gradual transformation from lower to middle palaeolithic culture. This change both in terms of typology and stratigraphy has been documented at Susunia, Laljal and Suvarnarekha.

The Acheulian culture was succeeded by middle palaeolithic culture in which the flake tools became the diagnostic character of the industry. Handaxes of earlier types are found to have continued for sometime, but the shapes were mostly limited to small ovate and cordate. Cleavers however totally disappeared. Scrapers, specially side scrapers became numerous while points including tanged varieties and borers have been added in the new industrial assemblage. The middle palaeolithic industry in West Bengal does not contain any flake blades or fluted cores as it has been reported from some other parts

of India specially in the quartzite zone (Banerjee, 1987). The levallosian technique is totally absent. The earlier techniques continued for the manufacture of middle palaeolithic tools. Flake tools belonging to this cultural phase have been collected from different parts of the State specially Laljal Susunia and Suvarnarekha regions. The genesis of middle palaeolithic culture of the state lies in the earlier Acheulian culture of which the flake element developed into a full fledged flake industry of middle palaeolithic culture.

The middle palaeolithic industry of State does not contain any blades or flake blades which could suggest a gradual transformation from middle to upper palaeolithic culture. Moreover this change has not been recorded by stratigraphy. It seems clear that the middle palaeolithic industry in West Bengal did not develop into upper palaeolithic industry. The origin of upper palaeolithic culture remains uncertain. It is still not clear whether the upper palaeolithic culture which is largely characterized by flake blade elements derived its origin from the neighbouring Singhbhum or from some other distant places. But it is true that the upper palaeolithic industry is a unique and distinct development in the whole palaeolithic assemblages in the state. Its long blades, blade tools, point, including both unifacial and bifacial varieties and end scrapers (Figs. 1-2) made on siliceous materials like chert and green quartz can hardly be compared with similar finds from the State. In fact, it recalls the famous European salustrian laurel and willow leaf points. The major tool types of this cultural phase include among others various scrapers, points, blades, borers and burins etc. Kattara, in Jhargram sub-division of Midnapur district is a unique site of this cultural phase. A small trial excavation has revealed stratified upper palaeolithic materials (Fig. 3) from a yellow silt deposition at a depth of 1.20 metre below which lies a deposit of cemented gravel bed above the bedrock. Statistical analysis of Kattara material reveals that blade element constitutes 33% in the total assemblage. Both extensive pressure flaking and blade technique were in vogue during this cultural phase. This upper palaeolithic industry having both flake and blade tools developed into full fledged microlithic industry during the subsequent post pleistocene period, and this change is recorded from Laljal where a small excavation has revealed the existence of a flake blade industry below the microlithic deposit indicating thereby gradual transformation from upper to mesolithic culture in West Bengal.

Summary and conclusion

It appears reasonable to conclude from the above discussion that the genesis of both the Acheulian and upper palaeolithic cultures in West Bengal might have been derived from outside the State. The Acheulians in West Bengal further developed into middle palaeolithic culture while its chopper /chopping components being extremely localized in character could not further develop. Most of the rivers in the south western part of West Bengal contain two gravel beds and two silt beds. But sometime these gravel beds in the tributary rivers are replaced by laterites. The lower palaeolithic tools are found present from the lower gravel. The beginning of Acheulian culture in West Bengal can be put to some where between 150,000 to 100,000 B.P. Some of the superbly finished tools strongly demonstrate the technical efficiencies achieved by our prehistoric ancestors to work over intractable materials like quartzite. The Acheulian culture towards the close developed into a flake industry and thereby giving rise to what is known as middle palaeolithic culture. But the middle palaeolithic culture with its flake industry could not develop into a flake / blade industry of upper palaeolithic culture. Naturally the upper palaeolithic culture with its distinctive flake-blade character was an immigrant culture. This upper palaeolithic industry towards the close of pleistocene period gradually developed into a full fledged microlithic industry.

REFERENCES

1. Banerjee, K. D. 1987, 'Stone age migrations in India.' Archaeology and History : essays in memory of Sri A. Ghosh, edited by B. N. Pande and B. D. Chattopadhyay. PP 41 to 46.
2. Chard, Chester S. 1975, *Man in prehistory*. Mcgraw hill Inc. U.S.A.
3. Datta, A. K. 1985, "Cultural zones in lower Palaeolithic West Bengal". Indian Museum Bulletin. pp 69-77 Calcutta.
4. Ghosh, A. K. 1978, "History of the Bangalees : the unrecorded period" History and Society : essays in memory of Niharrajan Ray. edited by Debiprasad Chattopadhyay.
5. Wymer, John. 1982, *The palaeolithic age*. Croom helm LTD. London.

A NOTE ON THE STONE COLLECTION OF THE S.R.C. MUSEUM JAIPUR AND SANG-I-LARANJĀ (SHIVERING STONE)

R. NATH

THE S.R.C. Museum of Indology Jaipur, founded by Acharya Ram Charan Sharma 'Vyakul' contains a fabulous collection of antiquities and art-works, including manuscripts and firmāns; paintings; architectural drawings; sculptures; terracottas; textiles; Tantra-Yantras; coins; and other invaluable items of archaeological and historical interest. It also has a rare collection of stones, some 2000 specimens of which in their original form or in the form of artworks such as sculptures and toys; decorative pieces; bowls; utensils and kitchenwares; walking-sticks; curios; or cut-pieces have been carefully preserved by him, which is an amazingly wide variety for a single collection. He can identify each one of them by its distinctive name, type and family, and describe its properties and use, some time; quoting from the texts. There are 23 manuscripts on stones in this collection, only 8 or 9 out of which have been published. He is, without doubt, a living encyclopaedia in this respect.

This rare collection of stones can be roughly divided into four categories :

(A). *Precious Stones* (Jewels, *Ratna*) : which are used for jewellery and which are also believed to possess astrological and medicinal properties. Some of the most important of this class are :

1. *GOMAD* (गोमेद ; Skt. *Gomāida*) – Saridonex – Moonstone or Zircon (colour – brownish red, or yellowish green)
2. *HĪRĀ* (हीरा ; Skt. *Hīraka*; Per. Almas or Ilmash) – Diamond (colour – white, yellow, green or red)
3. *LAHSŪNĪĀ* (लहसूनीया ; Skt. *Vaidūrya*) – Cat's Eye (colour – reddish white)
4. *MĀṆĪK* (or *CHUNNĪ*) (माणिक, चुन्नी ; Skt. *Māṇikya*; Per. *Yāqūt* or *Lāl-Badakhshān*) – Ruby (colour – red) : A pink variety is called Spinal Ruby or *Lāldī* (लालड़ी).
5. *NĪLAM* (नीलम ; Skt. *Nīla-Ratna*; Per. *Yāqūt-Kābul*) – Sapphire (colour – deep or light blue)
6. *PANNĀ* (पन्ना ; Skt. *Markata*; Per. *Zamurrad*) – Emerald (colour – green)
7. *PUKHRĀJ* (पुखराज ; Skt. *Puṣparāga*; Per. *Yāqūt'al-Azark* – Yellow Sapphire) – Topaz (colour – yellow, white or blue);
Sunehlā (सुनेह्ला) is gold topaz;
Dhunelā (धुनेला) is smokey – grey topaz

(B). *Semi – Precious Stones (Upa-Ratna)* : which also are used in less costly jewellery but on a larger scale for Inlay and Mosaic in Architecture and also in stone decorative pieces as plates, boxes, table-tops etc. The Taj Mahal perhaps provides the grandest example of the use of semi-precious stones in Inlay. Some of the most important are :

1. *ĀBRĪ* (आवरी) – (colour – blackish golden)
2. *AJŪBĀ* (अजुबा) – Wonder-stone
3. *AMETHYST* – It is a variety of crystallized Quartz (colour-purple or bluish violet); *Kaṭehlā* (कटैल्ला) is a variety of Amethyst of indigo colour
4. *AQĪQ* (अककी) (Per. *Yemenī*) – Agate (colour – brown or blackish red); it is of eight types; *Sang-i-Sulaimānī* is its variety
5. *BAIRŪZ* (वेरूज) – Aquamarine (colour – light blue)
6. *BILLAU* (बिल्लौर ; Skt. *Sphaṭika*) – Crystal or Quartz (colour – white)
7. *CORNELIAN* (Skt. *Rudhirākhyā-Manī*) – a variety of non-crystallized Quartz (colour – red)
8. *DAHANĀ- (DĀNĀ) -I- FARANG* (दाना-फरंग) – Kidney-stone-Malakite (colour – light green like Pistachio)
9. *FIROZĀ* (फिरोजा ; Skt. *Haritāśva*) – Turquoise (colour – blue)
10. *GODANTA* (गोदन्त) – (colour – light yellow)
11. *JASPER* (जस्पर ; Skt. *Sūryakānta*) – A variety of non-crystallized Quartz (colour – blackish green)
12. *KHATTŪ* (खत्तू ; Per. *Sang-i-Khapariā*) – A variety of Agate
13. *LĀJWARD* (लाजवर्द ; Skt. *Rājāvarta*) – Lapis Lazuli – (colour – Blue)
14. *MAKNĀTĪS* (मकनातीस) – Magnet-stone (colour – greyish white with lustre)
15. *MARGAZ* (मरगज) – A variety of Indian jade without 'water' (आव) (colour – light green)
16. *NAKHOD* (नखौद)
17. *NĀMDĀ* (नामडा) – (colour – deep red)
18. *OPAL* (ओपल ; Skt. *Dugdha-Pāṣāṇa* or *Indradhanuṣa-Pāṣāṇa*) – Shirgola (in several colour) – a variety of non-crystalized Quartz
19. *PAI-ZAHAR* (पाये-जहर) – A variety of *Zahar-Mohrā*, an antidote of poison (colour – light green or yellow)
20. *PITŪNĪĀ* (पितुनिया ; Skt. *Raktāśma*) – Bloodstone – (colour – red drops on blue background)

21. *QUDRAT* (कुदरत) – (colour –white, yellow drops on black background)
22. *SANG-I-DARCHANĀ* (संग-ए-दारचना) – (colour – yellowdrops like gram pulse on black-blue background)
23. *SANG-I-DOUR* (संग-ए-दूर) or *DURRĀI-NAFAZ* – (colour – light yellowish grey)
24. *SANG-I-TILIYAR* (तिलियर) – (colour – white drops like 'til' – oilseeds on black background)
25. *SĪMAQ* or *SĀNG-I-SĪMAQ* (सीमाक) – one of the hardest stones – (colour – red yellow and grey with drops of yellow or pink)
26. *SULAIMĀNĪ* (सुलेमानी) – Onyx – (colour – white fibre on black ground) – other varieties of this stone are *Alemānī* (which has grey fibre) and *Jezamānī* (which is yellowish grey)
27. *TĀMRĀ* (तामरा ; Skt. *Pulaka*; Per. *Sang-i-Māhtāb*) – Garnet – (colour – blackish red)
28. *TILĀĪ* (तिलाई) – Goldstone
29. *TURMALĪ* (तुरमली ; Skt. *Vaikrānta* or *Nīlavajra*) – Tourmaline – It is a variety of Amethyst
30. *TURSĀWĀ* – (colour – pink red)
31. *YASHAB* (यशब) – Jade – (colour – light green with lustre) – it is also suitable for making utensils, toys, sculptures and curios and is most popularly used in China-ware
32. *ZABARZAD* or *JABARNAJAD* (जबरजद ; Skt. *Ghṛta-Maṇi*) – Peridot – (colour – transparent blue)

(C). *Architectural Stones* : which are used in building construction in masonry as well as pillars, brackets, *jālīs* and ceiling-slabs (= *paṭṭīs*) and also in making sculptures. There are only a few varieties of granite, basalt, schist, quartzite and such other stones, but the collection has a large number of varieties of sandstone, white marble and other stones which are quarried in U.P. and Rajasthan. Some of their most prominent of these stones are :

1. *SANG-I-SURKH* (लाल-पत्थर) – Red sandstone is most popularly available. It comes from different mines, which makes the difference in quality and usage. Red sandstone from Fatehpur Sikri is weak and is used in masonry in the form of *khaṇḍas*; and mill-stones (*chakkīs*) are also made from it. Karauli stone is useful for pillars, brackets, *jālīs* and such other architectural parts. Dholpur stone is pinkish and owing to its pleasant impression it is used on facades. Tantpur and Paharpur stones are of a superior quality and are used in architecture and sculpture on a large scale. An extremely fine variety of white-spotted red sandstone was quarried near Sar-Mathura and supplied from here to Mathura where beautiful sculptures were carved from it in ancient times which is now probably the place was named Sar-Mathura. Hindaun stone is used for *paṭṭīs* (ceiling slabs). *Sang-i-Gwalior* of grey and whitish yellow colour is excellent for architectural use. Obviously the Aravalli ranges which extend well into the Jamuna-Chambal region, west of Dholpur and north of Chambal, yielded some of the finest varieties of sandstone in largest quantities. It is with the local Stone that buildings have been raised and sculptures made in this region (which includes Braja (ब्रज) since ancient times, which of course include the Mughal

monuments of Agra and Fatehpur Sikri. Several varieties of this stone were also transported to other parts of Mughal Empire, some times as far as Lahore. Sandstone from Jaisalmer and Jodhpur is of a pinkish golden colour with a natural lustre which makes it the best choice for rich house-building. Other varieties of sandstone represented in this collection are *Bānsī*-Bharatpur (बाँसी) of light pink colour, without lustre, which is used in architecture and also for making things of daily use; *Gulābī* (गुलाबी) is also of pinkish colour; *Bādāl* (बादल) has shades of different colours; *Reg* (रेग) is of yellowish white colour; *Mariam* (मरियम) or *Sang-i-Mariam* is of white colour; *Dāntlā* (दाँतला) has broad white patches; *Gaurī* (गौरी) is a superior quality sandstone of yellowish white colour; *Lughiyā* (लुगिया) is of deep red colour.

2. *SANG-I-RUKHĀM* or *SANG-I-MARMAR* (संग-ए-रुखागं, संगमरमर) – white marble – which was obtained from Makrana, Rajnagar and other mines in Rajasthan. Though costlier than sandstone it was also largely used in architecture and sculpture owing to its better strength and impression and adaptibility to lustrous polishing. It is, in fact, in this elitist stone that the Jaina Temples of Abu and other sites in Rajasthan (10th-12th century A.D.) and the famous Taj Mahal and palatial mansions of Shah Jehan in the forts of Agra, Delhi and Lahore were built. It can be used as suitably in masonry on facades and ceilings, as for making architectural parts as pillars, brackets, struts, and jallies and also for making icons of gods and goddesses.
3. *SANG-I-MŪSĀ* (संगमूसा) Black Stone or Slate – which is obtained from Chittorgaḍh (hence called *Chittoḍī*) and other mines in Rajasthan. It belongs to the family of schist. *Kasautī* (कसौटी) is its variety. The famous throne of Jehangir, now placed in the Agra Fort, is made of this stone. The eleven pillars of the controversial Baburi Masjid – Ramjanmabhumi of Ayodhya are also of this stone. A greyish black variety is quarried in the Kota region.

Sang-i-Mūsā is used in Architecture sparingly with white marble for emphasis and more popularly in making sculptures. *Sang-i-Siyāh* of deep black colour with lustre is its superior, finely grained variety which is more used for sculpture.

4. *SANG-I-ISĀ* (संग-ए-ईसा) — is a blackish stone
5. *SANG-I-GAWĀ* (संग-ए-गवा) — is used for polishing
6. *KURANḌ* (कुरण्ड) — is an extremely hard stone of the schist family; it is used for making sharpeners (सान)
7. *GODAR* (गोदर)
8. *CHĪTĪ* (चीती)
9. *SANG-I-SAM* (संग-ए-सम)
10. *MĀRWAR* (मार्वर)
11. *LĀNS* (लॉस)
12. *SIFRĪ* (सिफरी)
13. *DHEDĪ* (देढ़ी) etc.

D. *MISCELLANEOUS STONES* : There are a large number of curious stones in this collection some of which are used for various medicinal or superstitious purposes, while some others are wonderful in themselves and are not used for anything. There are curios pure and simple. A few examples would suffice :

1. *ZAHAR-MOHRĀ* or *KHATĀI-ZAHAR MOHRĀ* (जहर-मोहरा) — It is a variety of Jade with light or whitish green colour. It is said to change its colour if placed in contact with poison and a sure test against poisoned foods which is why it was used for making plates and bowls for the kings, as precautionary measure. It is also used for making sculptures, toys and decorative pieces, almost competing with Jade in this respect.
2. *SANG-I-PANIAR* or *PANGHAN* (पनियर, पनघन) — Water-stone — It is of light greenish black colour. It contains water which can be as unmistakably seen as heard.
3. *HAQĪQ'UL-BAHĀR* (हकीकुल-बहार) — which bears impression of landscape permanently
4. *MAKDĪ* (मकड़ी) — contains something like a spider's web.
5. *GUDRĪ* (गुढड़ी) — bez bears multi-coloured patches like a *gudrī*.
6. *JHARNĀ* (झरना)
7. *MUVAINAJAF* (मुवैनजफ)
8. *SANG-I-SURMĀ* (संग-ए-सुरमा) — which is used for making collyrium
9. *SOHAN-MAKKHĪ* (सोनमकखी)
10. *HAZRAT-I-ŪH* (हज़रत-ए-ऊह) — is a medicinal stone
11. *HADĪD* (हदीद)
12. *SĪNGALĪ* (सींगली)
13. *HAWĀS* (हवास)
14. *HIJR'UL-YAHŪD* (हिजरूल-यहूद)
15. *SANG-I-SITĀRĀ* (सितारा) — is of brown colour and glitters like stars

E. *SANG-I-LARANZĀ OR HĀLAN* (संग-ए-लरज़ाँ, हालन) — It is the important stone in this collection. It is a very delicate variety of sandstone with a light pink colour (मटमैला गुलाबी). It drops sand particles easily (बालू की तरह झड़ता है). It is composed of layers and is of a very light weight, having, therefore, a very low Relative Density. Its unique quality is that it vibrates and shivers. If one holds it from one edge the whole does not remain static like stone but shivers elastically like thick rubber. There is absolutely no doubt about it. It is said to have been quarried in Hariyana near Dadri and from some unidentified place near Abu, bordering Gujarat. There are three pieces of this stone in the S.R.C. Museum collection, which measure and weigh as follows :

	Size in cms.						Weight in gms.
	Length		Breadth		Thickness		
1.	25	×	8	×	2	—	680
2.	17	×	7	×	1.3	—	280
3.	6	×	6	×	3	—	140

No.1 is slightly irregular and No.3 is similarly irregular square.

It appears that the secret of the Shivering Minarets (भुलती मीनार) of Ahmedabad lies in the use of this stone. These *mīnārs* were, most probably, built on the foundations, laid with several layers of *Sang-i-Laranzā* by a technique which is, of course, not known to us. But the use of this flexible stone in the foundations could have made the *mīnār* susceptible to a little movement consequent upon a stress on the shaft on one side. The stone for this work could have been procured from the mines near Abu. It is noteworthy that though there are minarets in other parts of the country, the most famous being the four free-standing minarets of the Taj Mahal at Agra, no other minarets shiver and this is a unique characteristic of the *mīnārs* of Ahmedabad. Even the two free-standing minarets situated there near the Railway Station, built of brick masonry, shiver. It appears that *Sang-i-Laranzā* was a rare stone; it was quarried in medieval times and the mines were either exhausted or deliberately destroyed and closed. It is nowhere available now, though masons still continue to know it by the name 'Hālan' (one that shivers). Obviously, had it been available to the Mughals, they would have certainly used it in their buildings. Particularly Jehangir who was most fond of curious and wonderful things would have certainly used this stone in the minarets of the main (southern) Gateway of his father's tomb at Sikandara Agra (1605-12 A.D.). Much of this, however, still remains a mystery until some one takes up and pursues this study consistently and with single-minded devotion.

CULTURAL CONTACTS BETWEEN INDIA AND CENTRAL ASIAN STATES DURING THE EARLY HISTORICAL PERIOD

P. BANERJEE

CENTRAL Asia was the meeting place of the diverse races and peoples, viz. the Greeks, the Parthians, the Scythians, the Yui-Ches, the Turks, the Chinese, the Tibetans, the Indians and several others. The Silk Road which invariably passed through the region made it economically prosperous and rendered the migration of the people from one state to another less strenuous. As a result of this, the Central Asia became the centre of many civilisations, religions beliefs and art traditions. Central Asia is a vast area stretching from the frontiers of the Gansu province of China to the eastern shores of the Caspian sea and it can be broadly divided into two zones, viz. 1. Eastern Turkestan, now called the Xinjian-uighur autonomous region of China and 2. Western Turkestan comprising the Uzbeg, Kyrgyz, Tadzhik, Kazak and Turkmen Republics. Our present discussion refers chiefly to the history of the cultural ties which existed between these newly emergent Central Asian States of the Western Turkestan and India during the early centuries of this Christian era.

Intimate cultural intercourse between India and Central Asia began from a political event, i.e. the successful military achievement of Chandragupta Maurya (4th century B.C.) against Seleukos who inherited the eastern territories of Alexander the Great. To buy peace Seleukos had to surrender the provinces of Paropanisadai (Kabul), Aeria (Herat) and Arachosia (Kandahar). From this political contact resulted a substantial accession of Indian influences to Afghanistan which became a strong base for diffusion of Indian culture. It is well known that Bamiyan and Balkh (Bactria) played a unique role in this respect. Both these places were very important centres of Buddhism and Indian Culture. Situated at strategic points they served as the gateway for transmission of Indian thought and arts to western countries and China. They were the frontiers of languages, civilisations and religions and through them came to India many races and ideas from the west. It is well known that the Mauryans exercised an effective control over Afghanistan and Hinduism and Buddhism remained a dominant force in the region for many centuries until the advent of Islam. Ptolemy included Afghanistan in India and it was called "White" India by Parthians.

The credit, however, goes to Asoka the great (272 B.C. to 232 B.C.) and Kanishka the Kushan (2nd century A.D.) for consolidating India's cultural relations with Central Asia, Iran, Syria and the neighbouring regions. The Kandahar bilingual inscription of Asoka furnishes an eloquent testimony to the expansion of cultural contact with Afghanistan and Central Asia. Added to this is another evidence in the form of Kharoshti inscription on a clay object from Begram layer I (3rd-2nd century B.C.), in which J. Harmatta reads a Buddhist name (B.A. Litvinsky, *History of Buddhism in Central Asia*, Calcutta 1970, pp. 59-60).

Asoka's ardent patronage of Buddhism and deputation of envoys by him to preach Dhamma and execute humanitarian measures as far as the foreign states beginning with Artiochus (II) Theos helped create friendly ties among the people of India and her neighbours. Again, it may be interesting to note that some of the Greek kings of India adopted Indian languages and scripts on their coins-legends and official purposes.

Between 206 B.C. and 190 B.C. Euthydemus became the king of the Bactria. His son Demetrius who conquered the Kabul valley and Punjab styled himself as the king of India. Some years later Eucratides conquered not only Bactria but also Gandhara (an ancient land on the confines of India and Afghanistan where flourished later on the official art of the Kushanas under the patronage of the emperor Kanishka).

While the early Graeco-Bactrian kings issued coins of purely Greek types, their successors from the time of Demetrius issued bi-lingual legends and their translations in Prakrit and Kharoshti script on the reverse. Pantaleon and Agathoces issued some copper coins of square shape in imitation of the Indian punch-marked coins with Prakrit legends in Indian Brahmi script. Further, a type of copper coins turned out at excavation at Aikhanoum in the Oxus valley, bearing the effigies of Krishna-Vasudeva with Chakra and of Balarama with plough. In addition to this, we should also mention here that a Garuda column (inscribed) was erected at Besnagar (Vidisa) in honour of Vasudeva (the God of gods) by Heliodoros, son of Dion. Deliodoros who is described in the inscription as worshipper of Bhagavat (Vasudeva) came to the court of Kasiputra Bhagabhadra as an envoy from Antialcidas (the Indo-Greek ruler) who on the numismatic grounds can be ascribed to c. 173-135 B.C.

The popularity of the Krishna-Vasudeva story outside India can be inferred also from the Zenob's story of the Indians in Armenia during the second century B.C. All this points to the diffusion of Indian cultural traditions outside India in the second century B.C. Of all the Yamana kings (Greek kings of India), Menander's name stands pre-eminent as an admirer and follower of Buddhism. Tradition has it that Menander (c. 115 B.C.-90 B.C.) renounced the world and became a Buddhist monk. Whatever it might be, his dialogue with the Buddhist monk Nagasena as recorded in the book *Milindapanho* has immortalised his name. Numismatic evidence would show that his territory comprised the central parts of Afghanistan, North-Western frontier Provinces of the undivided India, Punjab, Sindh, Rajputana, Kathiawad and a part of U.P. India's contact with the Afghanistan region during this period is clearly indicated also by the Shinkot steatite casket inscription in Kharoshti discovered in Bajaura a tribal area 22 miles to the west of the confluence of the Panjkora and Swat (R.C. Majumdar, ed. *Age of Imperial Unity*, p. 114). The inscriptions reveal that some relics of Sakyamuni Buddha were enshrined in Shinkot casket for worship by Viyakamitra (a prince) and afterwards by a chief named Vijayamitra). India's Cultural contact with western Turkestan reached its zenith during the rule of the Kushanas of whom Kanishka, as mentioned above, was the greatest.

The Kushanas belonged to the Yue-Chi tribe who moved along with their nomadic herds in a district between Dunhuang and mount Chi-lien north west of the Chinese province of Gamshu on the southern part of the gobi desert. The Yue-che were however driven by the Hiueng-nus from this region about 166 B.C. and they (the Yue-che) moved towards the west and reached Bactria. On the way they had to fight with two confederations of which the one was the Sai (probably Saka) people in the valley of the Ili river. In the Ili basin they had to fight with another tribe called the Wu-sun. In the first encounter the Yue-che defeated the Wu-sun. But finally, the Wu-sun defeated the Yue-che who consequently moved further west and reached Bactria and settled there after defeating the Indo-Greek kings Hippostratus and Hermaeus. The Yue-Che dwelt in the Oxus valley for more than a hundred years during which time they were divided into five branches of them the Kue-shang (Kushan) branch became the most powerful and invaded parts of Indo-Parthian realm and conquered central Afghanistan. Gradually, the Kushanas moved to India. During Kanishka's time the Kushan empire extended from the Aral sea to the Gangetic valley. Kanishka is said to have conquered some parts also of the Tarim

basin, namely Kashgar, Yarkand and Khotan under his patronage, Buddhism spread far and wide almost all over in his far-flung empire, and it proved to be a link for interchange of ideas and art forms among the various peoples inhabiting the Kushan kingdom. In spite of this predilections towards Buddhism, Kanishka was a tolerant and broad minded ruler. His coins which bear the Greek, Zoroastrian, and Saiva and other deities are an eloquent testimony to Kanishka's eclectic outlook. Similarly Kushan art and culture ushered in a syncretism of Buddhism, Hinduism and Zoroastrianism, Buddhism was deeply rooted in Afghanistan, Parthia and the Oxus valley during the Kushan times. Along with Buddhism many Hindu deities travelled to Central Asia.

Further, the Kushanas actively patronised not only the overland silk route trade but also commercial relations with the Roman world by sea which brought enormous prosperity to the people of Central Asia and India. This encouraged the mobility of the people and their cultural fusion. Between China and the Western world the trade was however mainly carried along the silk or caravan route. The silk road started from Changan and passed through Gansu to the oasis of Dun-huang. From there it passed through the famous jade Gate where it branched into two routes, the northern and the southern. The northern route proceeded across the desert to Hami and it went along the foot hills of the Tien Shan to Turfan, Karashar, Kucha, Aksu, Tumsuk and Kashgarh. The southern route follows the oasis towns of Miran, Kewriya, Khotan and Yarkand and from there it goes to Kashgar. Thus the northern and southern routes converged at Kashgarh. From there the Silk Road proceeds to Kokand, Samarkand, to Bukhara, and from there to Merve and then through Persia and Iraq it comes to the Mediterranean coast from where by ship the goods were carried to Rome. There are many subsilk roads also.

Many important routes flourished at the intersection of the migration routes and Bamiyan is one of them. Two routes, one coming from China to Iran through the Pamirs and Hindukush and the other ran from Taxila to Balkh through Peshawar and Kabul. Both these routes met at Bamiyan. From India, the Taxila route was very famous. The main Indian trade route started from Pataliputra, and came to Taxila via Mathura. From Mathura a western route branched off and proceeded to Bhrigukacchha.

So far as Migration routes and trade between India and western central Asia are concerned, Prof. B. N. Mukherjee's article on the same subject, published in the *Ratna-Cahndrika* is very important and useful to researchers. The whole panorama of Indo-central Asian relations has been amply brought out by the excavations conducted by Soviet scholars in various Central Asian states. The Kushanas were followed by the Guptas (4th-6th centuries). There is evidence to show that India's active cultural contacts continued also during this period and also subsequently for a couple of centuries more. Fahien and Hiuen Tsang record that during this period, Bamiyan and Balkh, western and eastern Central Asia were deeply imbued with Indian culture and there is ample archaeological evidence to prove it. The earliest cultural relics showing Indian influence in Western Central Asian art and life came from Ayrtaam, Termez, Kalchayan, Dalverzine Tepe and Kara-Tepe which have yielded objects of the Kushan period in large quantities.

Apart from certain coins, the sculptured friezes from Ayrtaam and Termez constitute the earliest document of the Kushan archaeology in Central Asia. As already stated the Kushan art of Central Asia is a blend of various art traditions Hellenistic, Iranian, Gandhara and Indian besides the local features, illustrating the historical forces operating in Central Asia during the Kushan times.

The story of the discovery of the first Ayrtaam frieze is very interesting. In October 1932 some border guards of a Russian ship noticed in the waters of Amu Darya a strange stone slab. When it

was discovered, it turned out to be a beautifully sculptured frieze. Thereafter the veteran archaeologist, Prof. E Masson undertook the excavation of the old site of Termez and unearthed the ancient remains of the first and second centuries A.D. and seven other friezes similar to the one discovered before. These friezes in which the busts of musicians are seated are decorated with acanthus leaves. The best of the Ayrtaf friezes remains however the one which was discovered first from the waters of the Amu Darya. There are three beautiful musicians seated in it : The first holds a drum, the second a flute and the third a three-stringed harp. These Ayrtaf friezes are related to Gandhara art with some Hellenistic influences.

Again in old Termez was discovered a stone sculpture showing the scenes from Buddha's life, viz. the Buddha in meditation and Mara's attack, executed in Gandhara style (2nd - 3rd century A.D.), as the general expression and drapery of the Buddha figure would indicate. Khalchayan also was an important centre of Buddhist Culture. Khalchayan finds are important and some of them are pre-Kushan in date. Khalchayan finds throw considerable light on the origin & development of Graeco-Bactrian art.

Another important Buddhist Site in ancient Bactria is Dalver Zine Tepe (upper Surkhana Darya in the Dinaw region) excavated by Prof. Pugachenkova in 1967. A Buddhist shrine containing remarkable sculptures in plastic and clay of early Kushan period was discovered here in addition to some tombs, pottery and figurines ascribable to 1st century B.C. to 1st century A.D. The Buddha and Bodhisattva images of Dalverzine-Tepe were executed in Gandhara style.

One of the most important Buddhist styles of the Kushan period in central Asia is Kara-Tepe (2nd-4th century A.D.), situated on the town site of old Termez in southern Uzbekistan. Kara-tepe represents the remains of a rock-cut cave monastery, the only one in Western Turkestan. The rock-cut Buddhist architecture originated in India from where it went to Bamiyan and central Asia and China. Excavations at Kara-Tepe began in 1937 under the direction of E.J.P. Chertina and thereafter were continued by Stavisky and his colleague. Kara-Tepe has yielded a variety of antiquities, such as mural fragments, stuccoes, ceramic vessels with Brahmi and Kharoshti inscriptions, and coins of the Kushan rulers, Vima Kadphises, Kanishka, Huvishka, and Vashdeva. Added to these finds are some Bactrian inscriptions in Greek script¹. The wall painting and images from Kara-Tepe are reminiscent of Gandhara and northern Afghanistan "As Kara-Tepe, Balkh, Surkh-kotal and the recently discovered Khalchayan are all situated in the same region, the similarity of script and artistic activity is not surprising. The finds made here and from some other places throw new light on the Kushan civilisation in Bactria, where a form of Buddhism which has absorbed many influences was wide spread".²

Of all the finds at Kara-Tepe, the inscriptions are of conspicuous importance in the sphere of cultural relations between India and Uzbekistan during the Kushan period. The Indian inscriptions in Brahmi and Kharoshti from Kara-tepe reveal the names of some Buddhist monks as Darmapala or Dhamma Pala, Mahadharma-Kathika, Mahesvara-dharma, Buddha-sira etc. Again, Indian names such as ghata and Kundika for vessel and vihara for monastery which occur in some of the inscriptions are indicative of profound Indian influences in Kara-Tepe. The inscriptions prove that during the period in question Kara-Tepe was a common centre of Mahasanghika and Sarvastivada Buddhist sects.

The fortunes of Kara-Tepe declined as a result of the Sasanian conquest of Bactria in the 3rd century A.D. Surkh-Kotal was also been destroyed by Sasanian raids.

1. Similar inscriptions have been found also at Balkh and Surkh-Kotal

2. George Fommkin, *Archaeology in Soviet Central Asia*, 1970, p. 113

"Under the leadership of Kirder there was a severe persecution of the followers of foreign religions in Iranian lands. Jews, Buddhists, Brahmanas....., and Manichaeans", I will speak about the Manichaeans in greater detail a little later. The Bactrian inscription from Kara-Tepe constitute an important document for the political & cultural history of the region. J. Harmatta, "The Bactrian Wall Inscriptions from Kara-Tape", Kara-Tape, Moscow, 1969.

Kara-Tepe where Kharoshti script and Prakrit language were widely in use was abandoned about the 4th century A.D. This was the time when also Niya, Endere, Miran and Louan (where too Kharoshti was used) were abandoned. Some 400 years later flourished in Adzhina-Tepe a Buddhist monastery which was perhaps the largest Buddhist establishment ever discovered in Western Central Asia. The site was excavated by Litvinsky and Zeymol. Their excavations brought to light many important antiquities including clay heads of Buddha and Bodhisattvas, a group of wall paintings showing seated Buddhas and the remains of a sculpture in clay of a colossus parinirvana Buddha, all ascribable to the 7th-8th century A.D.

The Adzhina-Tepe monastery was comprised of two equal halves, each approximately 150 square meter. The monastery complex had cells for the monks. The painted seated Buddhas mentioned above have parallels in some seated Buddhas in Khadalik near Khotan on the southern silk route (of Tarim basin). This would obviously point to the cultural interaction that existed between the two Turkestans during the 7th-8th centuries. Gupta art style predominates in these groups of Buddhas from Adzhina-Tepe and Khadalik.

Again stylistic affinities are noticeable between a head from Khalchayan in the Oxus valley and one from Miran in Eastern Turkestan. These affinities are the outcome of the fact that Balkh and Sogdiana are largely responsible for diffusion of Indian; Parthian and Hellenistic art traditions to eastern Turkestan.

As scholars have observed, some of the architectural features of the Buddhist monastery of Adzhina-Tepe show similarities to those of Buddhist shrines in India of the 4th-5th century A.D. A Bodhisattva figure from Adzhina-Tepe shows analogies to a celestial figure from Ajanta (see fig 12; Archaeology in Soviet Central Asia by Frumkin, and Ajanta edited by A. Ghosh, pl. IV).

Another spectacular archaeological site in Sogdiana is Pendzhipent situated about 72 Km east of Samarkand, on the river Zervastan. This splendid aggregate of buildings were explored and excavated by Soviet scholars including Yakubovskiy, Belenitskiy, Marshak and several others. From the fifth century onwards Pendzhipent was a centre of a remarkable civilisation until it was destroyed in 760 by the islamic invasion. Pendzhipent consisted of a fortress, the actual town (Sahristan) which included shrines of a suburb and a necropolis". In addition to the Building complex, streets and cemeteries which are of a great archaeological interest. Excavation at Pendzhikent brought to light many coins some of which are Sogadian issues, wood carvings, clay sculptures and paintings of great artistic value. Some of the wood carvings show affinities to early medieval Indian style.

The wall-paintings and images of Pendzhikent are the product of a local school of painting 'Iranian in tendency, yet highly individual', Professor Bussagli observes that the school of Pendzhikent has affinities with Balalyk-Tepe, Varaksha and less important centres in Kyrgiziya and Tadzhikistan, thus proving itself to be a part of wider art movement¹

1. M. Bussagli, Painting of Central Asia, P.43.

Highly interesting are the Pendzhikent paintings which deal with the story of Rustam, and his fight with Dev, etc., as narrated in the Shah-nama which is a Persian epic. These paintings are executed in a style very akin to Iranian art idiom.

Some of the Pendzhikent paintings depict Indian subjects, including Siva, Indian female goddesses, and an episode probably from the Mahabharata (Virata parva) showing the game of chess or dice between Yudhisthira and the King of Virat.

Many religious beliefs were in vogue in pendzhikent, such as Saivism, Zoroastrianism and Manichaeism which existed side by side in the region.

Though Sogdiana borrowed many art and iconographic motifs from India and other sources, she had a strong cultural base of her own. In this connection Professor Beleritskiy has made some significant observations. When Buddhism came here and brought with it the worship of Indian deities, the Sogdians, who adopted the cult of the five gods, Brahma, Indra, Mahadeva (Siva), Narayana and Vaisravana identified the first three with the members of their own pantheon, Brahma with Zrvan, Indra with Adbag and Mahadeva with Veshparkar ... The Indian Iconography of Brahma, Indra and Siva-Mahadeva is repeated.

Brahma-Zrvan had a great beard, Indra-Adbag had a third eye, and Siva (Mahadeva – Veshparkar had three faces)¹. When we compare the art and iconographic trends of Western Central Asia with the Sinjinag area, we find that Eastern Turkestan was less innovative. The Indian deities in Khotan and other Eastern central Asian areas have not in any way undergone any change or transformation, as in Sogdiana. Buddhist remains have been found in several other sites in Western Turkestan. To mention a few, the remains of a temple believed to have been a Buddhist one have been found in Kuva in Ferghana. The clay sculptures and other finds from here are interesting. They include heads of various types, busts of figures with bearded faces, carrying skulls on their heads and the bust of a statue with moustache, ornaments and a third eye placed horizontally on the forehead, which I believe, may be a figure of Indra in his role as a minor Buddhist god.

Again Kyrgyziya was an important centre of Buddhism in the 7th-8th century. In the year 1953-54 Kyzlasov unearthed at Ak-Beshin (Chu valley), a big Buddhist monastery containing among other things the remains of some seated Buddha images, some clay figures and also some gilded medallions bearing the representation of Buddha and Bodhisattva figures. This monastery was burnt down in the 8th century and destroyed later on by the Kartuks.¹ In 1955 was discovered here a Buddhist shrine by Zyablin. It contained many fragments of sculpture, including one huge Bodhisattva. This shrine was destroyed in the 7th century.

Kozhemiako discovered in north Kyrgyzia the remains of a Buddhist shrine with a colossal Buddha image, which belongs to the 8th century.

It is worth noting here that at Karabulak in South Kyrgyzia was found a bronze handle representing a female figure in Amaravati-nagarjunakonda style with some elements of Begram art.

At Margiana in Turkmenistan were discovered the remains of an old Stupa with a clay Buddha figure on one of its sides. The statue was mutilated, only its head had survived. The Stupa was built during the early centuries of the christian era.

¹ Azarpay, Sogdian Paintings, pp. 29-30.

Near the Stupa were found the traces of a Sangharama and a unique vase with colourful paintings and fragments of a month-eaten manuscript inside it. the manuscript was written in Brahmi script.

The preceding would show that Buddhist Culture was widespread throughout Western Turkestan for many centuries from the Kushan times to c. 9th century A.D. And it should also be emphasized here that the central Asia was not always on the receiving side. It made significant efforts jointly with India to establish a social order of peace and harmony, binding together on the basis of Buddhist humanism, the people of different races and hues in the vast Indo-central Asian perspective.

Among the main contributions of Central Asian states we may say that the central Asian monks played a vital role in the transmission of Buddhism to Eastern Turkestan and China. During the early period of Indo-Chinese relations India was represented not by Indians directly but by her neighbours, the Yue-Che, the Parthians and Sogdians. The Tocharian monk Ghoshaka who took an active part in the proceedings of the fourth Buddhist council held under the patronage of the Kushan king Kanishka in the 2nd century A.D. Ghoshaka was one of the compilers of the commentary (Vibhasha) to the Sutta-Vinaya and Abhidharma. Among the Yue-Che missionaries who took a leading part in the work of propagation of Buddhism the name of Dharmaraksha stands pre-eminent. He settled in Dunhuang, an active Buddhist centre of the province of Gansu, where he was educated by Indian teachers. He acquired proficiency in 36 languages including Sanskrit and Chinese.

He travelled with his teachers in many parts of central Asia and some countries in the periphery of India. He went to China for propagation of Buddhism and is said to have translated many texts into Chinese including the Saddharma-Pundarika and the Lalitavistara. His religious activities helped spread Buddhism in North China during the 3rd-4th century A.D. Again, Lokakshema who was an Indo-seythian monk went to Loyang in 148 A.D. and translated twenty-three Buddhist texts into Chinese. He is considered to be one of the pioneers in introducing Mahayana Buddhism in China.

On the testimony of the Mahavamsa (the Ceylonese chronicle) Buddhism seems to have been well established in Parthia in the 1st century B.C. As stated in it two important monks took part in the celebrations performed by the Ceylonese king, Duttagamani (101-77 B.C.) on the occasion of the laying of the Great Stupa (Maha-stupa). One of these monks was Mahadeva from Pallavabhogga and the other was Yavana Dharmarakshita from Alasanda. Scholars are of the opinion that Pallavabhogga is Parthia². In the year 148 A.D. a Parthian prince (called Nagan-She-Kao) who became a monk came to China with a large number of Buddhist texts. He settled in White Horse Monastery at Loyang and spent the rest of his life in translating Buddhist texts into Chinese.

Like the Yue-che and Parthians, the Sogdians also were deeply interested in Buddhism. The most important of Sogdian monks who preached Buddhism in China was Kang-Sengui. His father was a Sogdian merchant who settled in Tankin in the third century A.D. After his father's death he went to Nanjing where he built a monastery and established a school. He was the first to preach Buddhism in South China systematically (P.C. Bagchi, India and China, 31.).

The interest of the Sogdians in Buddhism and its propagation is evident also from the discovery of the Turkic-Buddhist texts from Eastern Turkestan. A von gabain who has studied these texts observes : "Many of the basic terms in the Buddhism of the Turkic people are of zoroastrian origin and they must have been borrowed from the west through the medium of the Sogdians".³

1. George Frum Kin, Archaeology in Soviet Central Asia, p. 37.

2. B. A. Litvinsky, outline History of Buddhism in central Asia, P.61, Kushana studies in U.S.S.R, Calcutta, 1970.

3. See B. Litvinstzy, op. cit., p. 72.

Besides Buddhism, Zoroastrianism, and Manichaeism were, as noted above, in vogue in Sogdiana. Sogdian art exercised influence on the art of Eastern Turkestan and China. Chang Yen-Yuan, a ninth century art historian of China states that Sogdian art style was brought to China by a painter called Ts'ao Chungta (550-577 A.D.). While the authenticity of this tradition is doubted by some scholars there can hardly be any doubt regarding the presence of Sogdian influence on the art style of Khotan, as can be presumed from the elongation of certain figures including one (called Persian Buddha identified by Stein and 'Indra' by the present author). This figure was found in Dandan-Uliq in Khotan region. Interaction between Sogdian and Khotanese art is clearly demonstrated here. Affinities between Sogdian and Khotanese art are evident also from a group of seated Buddhas from Adzhina-Tepe and those from Khadalik, as already mentioned. Sogdians had a rich literature which had impact all over central Asia. At one time the Sogdian language was the Lingua franca of most parts of Central Asia.

From the 6th century onwards the Turks seem to have come under the influence of Buddhism, Tun-shahre, the Khan of the western Turks, accorded welcome to the Chinese traveller Hiuen-Tsang (7th century A.D.). Ouk'ang the Chinese traveller visited Gandhara and Kashmir between 759 and 764 A.D. and he records that the Turks erected in this region many Buddhist temples. He mentions that at Kashmir he saw there the Khatun's temple which was constructed under the Turks. B.A. Litvinsky, op. cit, p. 90.

As Central Asia was a melting pot there arose a synthetic culture with various streams of thought and art traditions. But India alone did not dominate the scene. Iranian traditions were also deeply rooted in this area. Another interesting side of it was the interaction or intermigration of ideas and art forms between India and Persia. This happened because of geographical proximity of these two countries.

Though Afghanistan was for a couple of centuries under the Achaemenian occupation, it came under Indian influence from the Maurya times onwards. Again in many periods the frontiers between India and Persia were not completely defined as is now and in other words, Western India and Persia cannot be regarded as isolated and water-light compartments. There was a lot of "give and take" between these two countries. Religious and cultural movements that arose in India and Persia moved each other. I need not list here many instances to prove this since the picture is more or less clear to the scholars. The Vedic and Avestic traditions reveal that in distant past, the Iranians and Indians lived and worshipped together for a considerable time. So, some common elements between these two cultures were a common heritage to both the countries. We know that in Persia there was the custom of exposing the dead to the vultures. Similar customs are met with also in the Pitakas which mention that the cemeteries are the places where the corpses are thrown away, not burnt or buried. In the *Digha Nikaya*, III, Buddha states that the sakyas married their sisters. This kind of custom was also permitted in Persia. Again, the mixed civilisation which the Kushanas brought to India included Zoroastrianism and there took place in course of time a synthesis of Buddhism and Zoroastrianism as is evident from a short inscription on a painted fragment from Kara-tepe which reads as Buddha-Mazda. As we have already seen that Buddhism was well established not only in Iran but also in all the Iranian zones, such as Bactria, sogdiana and Tarim Basin. Curiously, Buddhism was reintroduced in Iran for a short time during the 13th century by Mongal II-Khans. But it was a Kashmiri and Tibetan form (The Iranian Face of Buddhism, East & West, No. 1-14 (1990) by Danies Alan Scott.)

That Persia and India had close cultural contacts can be explained with the help of many other instances too. As we know, Buddhism had a profound impact on Manichaenism. Mani, the founder

of this Religion was born in about 215 or 216 A.D. in Ctesiphon in the province of Babylon which then belonged to Persia. Even though Mani was persecuted and put to death and in spite of many vicissitudes through which Manichaenism had to go, this religion spread far and wide. Sogdiana and the Tarim basins were among the main strongholds of Manichaeanism. In fact, Manichaenism must have travelled to Eastern Turkestan to Tarim basin and China from Sogdiana. The German expedition to Central Asia discovered many fragments of Manichaean manuscripts some of which are illustrated and some of this was first identified by me.

Mani was a profound thinker and a powerful teacher. As he belonged to Persia, his religion was based upon the Persian religious tradition of the opposition of the good and the evil, light and darkness.

Mani is said to have been an expert painter too. According to A-Von Lecoq, some of the Manichaean mural fragments from Khoch represent Mani and his followers. One of the Manichaen illustrated leaves from Turfan contain the representation of Hindu trinity, Brahma, Vishnu and Siva along with Ganesa. This shows that Mani was acquainted not only with Buddhism, but also with Hindu mythology. It is known that Mani in the course of his travel to various countries came also to India, and thus he must have come in contact with various religious sects including Hindus and Buddhists. Mani seems to have been deeply influenced by Buddhism. Like Buddhism, Manichaenism prescribed a strict ascetic life, forbidding sexual life, the use of meat or wine, the acquisition of wealth and other worldly good for his monks. Again Manichaen texts contain many Buddhist terms, such as s'qmn (Sakyamuni), nybr in (nirvana), byxs (Bhikshu), Mytrg (Maitreya). Henning has observed that even the oldest Manichaean Parthian political texts which can be ascribed to Mar Ammi himself contain some Buddhist terms.

If Manichaenism was deeply influenced by Buddhism and to some extent by Hinduism, the Indian, especially the north Indian sun-worship and iconography were greatly affected by Iranian tradition. The *Brihaspati Samhita* records that the proper persons to superintend the conservation of the sun temple were magas or magi (the Iranian priest). The story goes that Krishna's son Samba was suffering from Leprosy and he was cured of his disease by worshipping the sun. He constructed a temple in honour of the Sun-God on the bank of the river Chandrabhaga but could not find any Brahmins in India to officiate in the temples. So he invited some Magas from Sakadvipa for the purpose. There is no doubt that Magas are zoroastrian priests from Sakadvipa (it is either Persia or the Oxus region under the Iranian rule or influence).

Again, certain Indian religious texts prescribed that the sun god should be represented with a girdle called *Avyanga*. "It is based on the Avestan *Aiviyaonghana*, the sacred woollen thread girdle which a zoroastrian is enjoined to wear" (Bannerjea, J.N., *Development of Hindu Iconography*).

Iranian influence on Indian sun worship seems to be quite old. A fine temple seal discovered by Dr. Spooner from Basaich contains a fire altar probably with a solar disc at the top with the legend Bhagavata Adityasya in Gupta characters. J.N. Bannerjea mentions in his *Development of Hindu Iconography* p. 192 that he has recognised the same deity on the coins of Panchala Bhanu Mitra and holds that the associations of sun and fire" may be due to the Fire and Sun worshipping Iranian Magi, who must have influenced the local North-Indian sun worship in the early centuries of the Christian era.

Again, some scholars notice Persian influence on the development of Amitabha (of boundless light) and Maitreya (as a saviour god or Messiah) cults.

Sir Charles Eliot in his book *Hinduism and Buddhism*, vol 3, 451 pp, observes : " Zoroastrian influence is I think indubitable in the figures of the great Bodhisattvas, even Maitreya, and above all in Amitabha and his paradise. These personalities have been adroitly fitted into Indian theology, but they have no Indian lineage and in spite of all explanations, Amitabha and the salvation which he offers remain in strange contradiction with the teaching of Gotama, ... Close parallels may be found in the Avesta to these radiant and benevolent Genii and the heaven of boundless light which is entered by those who repeat his name. There is good evidence to connect the early worship of Amitabha with Central Asia. Later Iranian influence might have meant Mithraism, Manichaeism as well as Zoroastrianism ..." (Sir Charles Eliot, *Hinduism and Buddhism*, part III, pp. 451-52).

Now we may make some remarks regarding the intermigration of some art motifs and styles between India and Persia. It is well known the history of Buddhist art begins with Asoka who erected many columns with their majestic and well-executed animal capitals, for example, the Sarnath Lion-capital, the Rampurva Bull capital etc. It is surprising that the art at its early stage is so perfect. Though this art is Indian in origin it betrays according to scholars the influence of Achaemenian art of Persepolis, and to some extent Hellenistic or Seleucid art. This shows close cultural contacts of India with her western neighbours in the sphere of art traditions.

The contribution of Gandharan art to the dissemination of the Buddhist faith in Central Asia and China is well known. In Gandhara, Buddhist faith and Greek culture met, giving rise to a hybrid art in which the theme is chiefly Buddhism but the style is dominated by semi-classical tradition.

The chronology of Gandhar art and its stylistic characteristics offer certain problems yet to be solved. Generally speaking, this art might have its beginning in the reign of the Seythian prince Azes (c. 50 B.C.) though it reached its zenith during the rule of Kanishka, a great patron of Buddhism. His empire extended from the Aral sea to the Gangetic region. This is a realm which included India, Afghanistan and Bactria having different cultural backgrounds, with however a common band provided by Buddhism.

As to the stylistic characteristics of Gandhara art, opinions differ amongst scholars and the Bactrian sites excavated by Soviet scholars during the last 40 years do not also solve the problems connected with the syncretic nature of this art.

Foucher suggested that the origins of the Gandhara school of art were to be sought "in the lingering Greek influences of Bactria 150-100 B.C." Vincent Smith was however of the opinion that it was the Roman art and not Greek art that lay behind the Gandhara art. While Bachhofer and Marshall supported Foucher in relating the art of Gandhara to Greek ideas; Rowland, Soper, Wheeler and Aekermann regarded Rome as having provided stimulus for the Gandhara art. Professor Pugachenkova who excavated Khalchayan in the Surkhan Darya region in the northern Bactrian areas holds that the garland and erotes that appear in Gandhara and Mathura were transmitted from Bactria (where this device occurs in elaborate form in first century B.C. to first century A.D. in Khalchayan).

Artistic affinities between Mathura and Khalchayan are apparent also from the seated figure on a medallion found from the latter place. Frumkin, Belenitsky, Rowland and Stavisky - all have pointed to the similarity of the representation on the medallion to the seated figure of Wimakidphises found at Mat, Mathura.

What is apparent from the Khalchayan sculpture is that they represent the stage in the evolution of Kushana sculpture.

Another important discovery of Dr. Pugachenkava from the Surkhan Darya region is the remains of a Buddhist shrine from Dalverzine-Tepe as noted above. Like Khalchayan, Dalverzine-Tepe has also yielded significant material for the analysis of the style of Bactrian art. "The sculpture and reliefs of the Buddhist shrine" from Dalverzine-Tepe comprised two scenes, one of a standing Buddha in Gandhara style and secondly the representations of the surrounding figures in Bactrian style. These sculptures represent according to Pugachenkova, the artistic principles as obtained in Bactria then. Again she suggests that Dalverzine-Tepe was the original capital of the Yue-Che-kushan, though Stavisky and several other scholars do not agree with this suggestion.

Sculptures from Kara-Tepe are not as significant as those from Khalchayan or Dalverzine-Tepe. Its importance lies in the fact that here was a complex, hewn out of rock in imitation of the rock-cut architecture of India.

The art of the Gupta and early medieval periods bear some Sassanian influence specially in the motif of pearl beads. Again the hunting scenes of Gupta coins seem to show striking similarity to the Sassanian hunting scenes. A comparative study of Indian and Central Asian art and religious traditions would fill in gap in our knowledge of the history of the India's relations with Central Asian region, in art and other cultural spheres.

With the establishment of Arab power in Central Asia or western Turkestan a new chapter began in its history. The new situation required adjustment and a dialogue between Buddhism and Islam. As a result of this there are so many new schools of thought. The Arabs became deeply interested in Indian scholars, literature and sciences, especially, astronomy, medicine and folk-lore, in which the Buddhist specialised.

Balkh was captured by the Arabs in 705 A.D. From Arabic Chronicles we come to know that Khalid, the Vizier of a Mansur was the son of the Barmak priest of Navasangharama of Balkh. The word Barmak seems to be divided from the word Paramaka, i.e. Buddhist priest.

As the Caliphs became interested in Indian thoughts and culture, the treatises of Aryabhatta and Brahmagupta were translated or adopted by Arabs. The Khalif's of Baghdad called Indian astronomers to their court to supervise the work. It is through the Arabs that the Indian astronomy reached Europe. However, the Arabs mastered the subject so well that 'an Arabic writer of the 9th century, who wrote an Indian astronomy and arithmetic became an object of study to the Hindus'¹.

Again, Indian medical science exercised a great influence upon the Arabs after 700 and the Khalifs of Baghdad caused many medical texts to be translated into Arabic. Charak and Susruta were regarded by the Arabic physicians as works of great authority. It is believed that Charaka was the royal physician in the court of Kanishka. Curiously enough the famous Bower manuscript consisting of three Indian medical texts now preserved in Bodlein Library, Oxford was found in stupa near Oumura in the neighbourhood of Kucha.

Again, the Indian texts, like the Mahabharata, the Ramayana and Panchatantra, etc. became popular in Central Asian states. Panchatantra came to be translated into Persian and several other languages.

¹ Macdonell, A History of Sanskrit literature, p. 426.

In the field of religion, Shahrastani (1076-1153) gives an accurate account of Buddhist psychology and doctrines in his book *Kitab-ul-Milal wan Nihal*. He describes the Buddhas, Bodhisattvas, etc. and certain Hindu religious practices, namely the worship of the goddess Mahakali and ablutions in the holy rivers. A religious movement which became popular to both Hindus and Muhammadans was Sufism which was a synthesis of two principles. Indian pantheism and Muslim Mysticism.¹

This is but a brief account of the Indo-Central Asian cultural relations binding various peoples into one common brotherhood. This is a vast subject, and of global interest.

1. See K.A. Nizami and B.G. Gafurov. Central Asia, edited by Amalendu Guha, Delhi, pp. 151-161.

BUDDHISM IN MONGOLIA FROM EARLY INDIA THROUGH CENTRAL ASIA

ALAKA CHATTOPADHYAYA

IN the history of cultural exchange between Early India, Central Asia, Tibet, China and Mongolia, ancient trade routes played a very significant role. From about the last century B.C., they were used not only for the purpose of carrying on trade between the countries but also for the dissemination of Buddhist culture from Early India and then through the vast region of Asiatic Mainland to Mongolia.

This region belonged to several religious and ethnic groups and in almost every way it is a land of contrast. Its snow-peaked mountain ranges give way to vast deserts dotted with greeneries and oases and allured adventurers from time immemorial to explore this ever-changing topography. Confronted with the almost unsurmountable barriers laments Huichao, the lone Korean monk to India (c.A.D. 723-727) :

Cold snow joins to masses of ice
Icy wind cracks open the earth
An ocean of snow like a whitewashed terrace,
The rivers gnaw through high cliffs
How shall I cross over the Pamirs?

(Memoirs of a Pilgrimage to Five Regions of India)

But throughout the region its major trade emporia and human settlements were connected by a network of trade routes. These are known as Silk Routes or Silk Roads as the traders carrying on trade by the routes made a very profitable business in silk. Apart from traders, numerous Buddhist pilgrims and monks set out for their hazardous journey of thousands and thousands of kilometers throughout the main east-west Trans-Asian trade routes or Silk Roads. In these alien, unknown routes, it is the self-sufficient Buddhist monk who emerges as the epitome of the intrepid pioneer-blazing inaccessible tracts, instructing the local tribes, founding monasteries and paving the path for expansion of Buddhism from India throughout Central Asia, China, Tibet, Mongolia, Manchuria and Korea. Thus, from the first to second centuries A.D. onwards, the expansion of trade was accompanied by the spread of Buddhism to the north along with the same routes of communication. Under the all-pervading influence of Buddhism, even the merchants participated in propagation of Buddhism through trade and became increasingly important agents whose ventures contributed to a thorough cultural change in vast portions of Asia.

Thereafter, Silk Roads or Silk Routes became predominantly Buddhist Routes from India to the Asiatic Mainland and were used for cultural exchange between several countries till about the 11th century A.D.

Buddhism followed this Buddhist (Silk) Routes on the way building huge monasteries fortified and defended by martial monks, providing shelter and protection from bandits to the travellers and traders of other countries. The extensiveness and historical as well as cultural importance of the network of these ancient Routes became apparent from the monumental Buddhist rock sculptures engraved throughout these winding and almost unending tracts.

Here, a most pertinent but yet unanswered question flashes up in one's mind : Why did Buddhism move from India to Central Asia from the 1st. Century A.D. onwards evidently not for conquest of countries by sword but for advancement of ideas through the path of non-violence, love and benefit for the mankind?

The history of Buddhism in India reveals that during its long span of 2500 years, it spread from the Madhyadesa (the Central Ganges Valley of India) first to the whole of India then by land and sea to almost every country of Asia and became one of the most important religions of the world.

The rapid expansion of Buddhism during Asoka's time not only within the empire but also to distant lands paved the way for the Buddhist monks to take Buddhism to Central Asia, China, Japan, Tibet, Korea and Mongolia in the north and to Burma, Srilanka, Thailand, Cambodia and other countries in the south. One learns from Buddhist literary sources and rock edicts that such missions were sent to the far-off land of the Yavanas (Ionian Greeks), Gandhara, to the Kingdoms of Syria, Egypt, Macedonia and even in North Africa.

It is true that we do not know exactly the period when Buddhism was introduced in Central Asia but positive evidence can be cited "to prove that small Indian colonies had been founded ... from Khotan up to the Labnor region before the Christian era. An Indian dialect, similar to that of North-Western India, was the official language in some of these states. The Indian colonists were the first to carry Buddhism to this region."

Buddhism was introduced in China from Eastern Turkistan during the reign of Han dynasty (25-220A.D.). Invited by Emperor Ming-ti (A.D. 58-75), a great admirer of Buddhism, Kashyapa Matanga and Dharmaratna, the two Buddhist monk-scholars from India were given as royal reception on their arrival in China (A.D. 67). The White-Horse Monastery (Swetaswa Vihara) was the first Buddhist monastery in China built in their honour. Out of many Indian works which they brought with them from India the translation of one is still available in China.

From then on large number of Buddhist monks from India—Kumarajiva, Dharmaraksha and others and Fa-Hsien, Hiuen-Tsiang, I-sing, etc, from China were most prominent among these Buddhist scholar-pilgrims of India and China.

"That the teachings of Buddhism, wherever spread, were able to arouse a new historical consciousness in the people's mind is nowhere seen so vividly as in Tibet". Apart from the legendary king Lha-tho-Tho-ri, who was said to be blessed by miraculous objects of worship of the Buddha, it is the first historical king Sron-btsan-sgam-po (A.D. 569-650) who introduced Buddhism in proper sense with the help of his two Buddhist wives, one the princess from Nepal another the princess of China. The king sent Thon-mi Sambhota, one of his ministers to India to learn the script and introduce written language in Tibet. Buddhist scholars like Santarakshita, Kamalasheela and Padmasambhava were invited from India to Tibet by the King Khri-Sron-lde btsan (A.D. 755-797). These Indian monk-scholars trained up disciples competent to preach the Doctrine as well as to translate Indian scriptures in Tibetan. Under the direct supervision of these Indian pandits, Buddhist scholars of Tibet started translating Indian scriptures in Tibetan. bSam-yas, the first Buddhist monastery of Tibet was founded by Santarakshita in the model of Odantapuri Vihara of India as the centre for preaching Buddhism in Tibet (A.D. 787).

On royal invitation Atisa Dipankara from Vikramasheela Vihara of India reached Tibet in A.D. 1041. He extensively toured the country with a band of loyal disciples to preach Buddhism in Tibet and laid his life there in A.D. 1054.

Among the eminent Tibetan historians of Buddhism like Gos-lo-tsaba, Taranath and Sum-pa, Bu-ston-Rin-Chen-grub (A.D. 1290-1364) not only wrote "History of Buddhism in India" but also with the help of his disciples scientifically rearranged the huge compilation of Tibetan translations of Indian texts in two parts - Kanjur and Tanjur. Kanjur consists of Buddha-Vacana in 100 volumes and Tanjur of Shastras and commentaries in 225 volumes; all total the number of these works exceeds 4500 texts.

Thousand years old practice of cultural exchange of monk-scholars between India and Tibet ended with Vanaratna "the last Paṇḍita" from Eastern India to Tibet in A.D. 1426. Buddhism also gradually disappeared from the land of the Buddha.

Tibet played a unique role in introducing Buddhism in Mongolia. There is no account that it was inducted by any Paṇḍita or scholar from other countries apart from Tibet.

For exploring the history of Buddhism in Mongolia one has to depend spacially on the Tibetan source materials preserved in the following work compiled in A.D. 1801-02-Grub-mtha'-Sel-Kye-me-lon. This work gives a vivid description how Buddhism spread over various countries, large and small, beginning from Kashmir, Persia, Yugur, Thogar, Orgyan, Nepal etc.

In Tibetan Historical Literature, 'Hor' commonly designates tribes of Mongol which since the 8th to 9th. centuries A.D. continuously overran Tibet. Prabodh Chandra Bagchi, however, traces the movements of the nomadic tribes since 3rd. Century B.C. "Since then the movements became continuous till the time of the great Mongol invasions and affected the civilisation of almost whole of sedantary Asia. Most of these race movements started from the Mongolian deserts and set in motion all nomadic tribes in the West."

In this respect glowing tribute should be paid to Emperor Chengis Khan (A.D. 1162-1227) who began his life as an insignificant individual named Temujin and ended his life as one of the greatest emperors of the world. Special attention should also be drawn to his important contribution for introducing Buddhism in Mongolia.

In 1206, the Great Convention of Mongol princes held on the bank of the river ONON had proclaimed Temujin as the Supreme Ruler of Mongolia and conferred upon him the title "Chengis Khan" (Khagan : Khaan). He was declared as the National Hero of Mongolia. Under his rule unification of scattered Mongol tribes and formation of a centralised, well governed state gave impetus to the development of Mongolia into one nation imbued with its own tradition and culture.

Chengis Khan conquered Manchuria in 1194 and became emperor of China. In 1202 he subjugated whole of the Hor and in 1206 Tibet, when Bakhtiar Khilji invaded Behar and Bengal. Thus, Chengis firmly established his supremacy on China, Tibet and also on Muslim countries in Central Asia.

The first teachers and state officials of the Mongols were Uigurs. The majority of them were Buddhists and their prayers contained the words "Om Mani Padme Hum". Through the Uigurs, Chengis Khan came under the influence of Buddhist culture. Chengis Khan died in Mongolia in August 1227 and left his heirs and vast empire stretching from the Pacific Ocean to Yuksin in the west, a huge well-organised army with developed political administration. He was a remarkable man of patience, magnetic

personality and religious tolerance which brought Chinese, Tunguts, Afgans, Iranians, Turks and numerous other races and tribes together in his army extremely loyal to him and to the country.

The 'Tibetan Chronological Tables' authentically establish that Mongolia received Buddhism primarily from the Sa-skyapa hierarchs of Tibet. Sa-skyapa means "Grey Earth" and the name of the hierarchs originates from the colour of the soil where the first Buddhist monastery of Sa-sKya was built in A.D. 1071. Sa-sKya Pan Chen (A.D. 1235-1280) the High Priest of Sa-sKya monastery in Tibet was taken by Mongol troops after the conquest of Tibet to the court of the Emperor. He was accompanied by his two nephews 'Phags-pa Lama and 'Phyags-na rDo-rje. The Sa-chen Khublai Khan, grandson of Chengis Khan, became the first Mongol Emperor of China. He constructed four big citadels in Be-cin (Beijing) in 1271. Upon the Sa-sKya hierarch 'Phags-pa Lama (A.D. 1235-1280) he conferred the sovereignty of Tibet and appointed him as "Ti-shih" (Imperial Teacher). Thus 'Phags-pa Lama and his hierarchy became the permanent royal preceptors of the Mongol court. 'Phags-pa Lama invented so-called National "Square Script" (Hor-Yig) based on Tibetan dBu-can script and it was adopted in Mongolia, by Imperial edict in A.D. 1269. The emphasis of the Tibetan sources is on the roles of the Sa-sKya Paṇḍita and his nephew 'Phags-pa Lama with only passing reference to the younger nephew Phyag-na rdo-rje and he is completely ignored in Tibetan Chos'byun, his is perhaps due to the Buddhist bias of the Tibetan historians. The Life-sketch as collected from Deb-Ther-dmar-po of Phyag-na rdo-rje is very interesting. At the age of six he went to Mongolia as an attendant to his uncle Chos-rje Sa-sKya Paṇ (ḍita). Prince Go-dan (son of Chengis Khan) dressed him in Mongol clothes and got him married to his own daughter. Later on Kublai Khan, the grandson of Chengis appointed him as the Lord of Tibet. Thus, when Phyags-pa Lama, the famous Imperial Teacher of Kublai was endowed with religious power, his younger brother Phyag-na-rdo-rje was entrusted with the political power as 'Ruler of Tibet' on behalf of the Mongol emperor.

Taranatha (Kun-dga 'Snin-po), the noted historian and author of "History of Buddhism in India" (born A.D. 1573) belonged to Jo-nan sect (Buddhist) - an offshoot of Sa-sKya-pa. The great reformer Tson-kha-pa (A.D. 1358-1419) founded the dGe-lugs-pa sect (Yellow Hats) - the most popular and influential Buddhist sect even to-day among the Tibetans. Ganden, Depung, Sera and Tashi-lhunpo - all these monasteries - the renowned centres of Buddhist scholarship - were founded by Tson-kha-pa and his disciples. After the decline of the Sa-skyapas, dGe-lugs-pas came to be favoured by the powerful Mongol kings. Tson-kha-pa was invited to Be-cin (Beijing) in 1406 by Emperor Yung-lo of Ta-Ming dynasty but sent his principal disciple Sa-sKya ye-ses who treated and cured the ailing emperor from an almost incurable disease. Under his direction a huge statue of Maitreya was built and placed in the monastery founded by the Emperor himself. After receiving profound respect and huge presentation from the Emperor, he returned to Tibet via Mongolia. It is said that Khublai Khan, the Mongol Emperor got the prediction from his spiritual preceptor Bhags-pa Lama that in future 'Phags-pa would reappear as a Lama bearing the name 'ocean' which is Tale (Dalai) in Mongolian Language and at that time the emperor's name would be 'Gold' or Altan in Mongolian.

Now Altan, the powerful ruler of Thumed Mongolia became aware of this prediction and came to know from the astrologer that in a former life he himself was the great Khublai Khan. On enquiry it was found that sonam gya-tsho the incarnate Lama of Depung monastery was himself 'Phyags-pa Lama reborn. Altan Khan sent his general to bring Sonam Gya-tsho to Mongolia. At the first meeting altan Khan respectfully addressed the Lama by the title 'Tale Lama Vajradhara', 'Tale' being the Mongolian equivalent of 'Gya-tsho' or 'ocean'. Sonam gya-tsho meaning "the ocean of merit". Thus

originated the name Dalai (from Tale) Lama by which the Buddhist hierarchs came to be known in Mongolia, China and Tibet still today. From that time Gya-tsho or "ocean" becomes inseparable part of the names of Hierarchs of the Dalai Lama.

After his death in 1587, the spirit of Sonam gya-tsho was discovered in Mongolia, in the family of a direct descendant of Chengis Khan. From then on succession of Dalai Lama on the basis of incarnation is still going on.

The work of translating Tibetan Buddhist texts in Mongolian continued throughout 14th. to 16th. centuries. It received a new impetus resulting from the meeting of Altan Khan and Sonam-gya-tsho (A.D. 1577-78).

The first Khalkha Buddhist monastery of Erdeni-Ju was built in A.D.1585-86 by Abatai, the Khalkha Mongol prince.

The 17th. century saw a begining of a great literary renaissance in Mongolia under Ligdan-Qan (A.D. 1604-1634) when the Tibetan Kanjur was translated into Mongolian (A.D. 1624). The establishment of Manchu rule in Mongolia in the 17th. century developed a special epistolary style under the triple influence of Manchu, Chines and Tibetan. Influence of classical Tibetan was paramount in the monasteries, royal courts and in the state administration Manchu and Chinese were predominant. The work of developing a new National Language based on spoken language has recently started.

Among the hierarchy of Dalai Lamas, the most distinguished one was the Fifth Dalai Lama (A.D. 1615-1680). Fifth Dalai Lama was a very renowned scholar and an able statesman. During the period of Seventh Dalai Lama (A.D.1708-1758) Capuchin and Jesuit missionaries came to visit Tibet.

The 'Tibetan Chronological Tables' tell us about "the last king Thogan thu-mur (Taimur) who left the capital of China and fled to Mongolia and then about the prominent role played by Gu-Sri Khan for the expansion of Buddhism and arbitration in the dispute between two warring religious groups (Buddhist) in Mongolia. In A.D.1642 Gu-Sri Khan, the Mongol king, invaded Tibet, conquered it and became the king of Tibet. He was a devout Buddhist, Afterwards in A.D. 1645 he made a present of the whole of Tibet to Fifth Dalai Lama and thus political as well as religious power to rule Tibet was conferred upon the Lamaist hierarchy in Tibet. He also helped Buddhism to gain firm ground in Mongolia through the translation of Buddhist texts. During the rule of his descendants also it was customary for the Mongolians to enter monastic collages to study Buddhist literature. By this time of the Sa-Kya-pas declined and the Ge-lugs-pa sect of Tson-Kha-pa gradually became the predominant one in Mongolia flooding the country with monasteries and religious congregation.

As the Russian scholars put if : Many of the Mongolian Khans were Buddhists. In the period 1628-30 West Mongolians came to the shores of the Volga and brought Buddhism along with them. Temples built by Russian Buddhists resemble those of Mongolia and Tibet. The first Buddhist monastery in Buryatia was built in A.D. 1741.

Thus Mongolian Buddhism swept the boundaries of its land and moved forward to engulf almost the whole of Asia and part of Europe too upto the river Volga in Russia. Preachings of the Buddha of love and piety to all living beings were the eternal message which it conveyed to the whole world.

originally the name Dala (from Tala) was given to the Buddhist monasteries which were known in Mongolia, China and Tibet since the time of the Mongols. From that time the name has become inseparable part of the names of the monasteries of the Dala Lama.

After his death in 1527, the spirit of 2 more incarnations was discovered in Mongolia in the family of a direct descendant of Chagatai Khan. From then on the name of Dala Lama has been in the family of the Chagatai Khan.

The first of the Dala Lamas was the Buddhist Lama of Mongolia, who was known as Dala Lama in the 16th century. It was a very important position in the hierarchy of the Buddhist monasteries in Mongolia.

The Dala Lama was the Buddhist monasteries of Mongolia. He was born in A.D. 1527-28. He was a very important figure in the history of Mongolia.

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A NOTE ON THE CHINESE INSCRIPTIONS IN THE INDIAN MUSEUM

XINRU LIU

SHYMALKANTI CHAKRAVARTI

FIVE Chinese inscriptions have so far been found at the Mahabodhi monastery in Bodh Gaya. Except for one which was left in the site, all of the four are preserved in the Indian Museum. Early studies were made by famous French sinologist E. Chavannes and a Dutch scholar G. Schlegel (*Toung Pao*, 1896, 1897 : *Revue de l'Histoire des Religions*. Annales du Musee Guimet). English translations offered by H. A. Giles, were included in *Mahabodhi*,¹ by Sir A. Cunningham in 1892.

Inscriptions on the three small slabs of stone (the two in the Museum and the one in Bodh Gaya) are short and clear. No one has questioned their reading and translation much after those early works. However, misreading and misinterpretations have been noticed in the works relating to the other two inscriptions (B. G. 122 and B. G. 133). A Chinese scholar, Zhou Da-fu, studied rubbings of those inscriptions and published them in the leading historical journal in China, *Li-shi Yan-jiu* (Studies in History), 1957, no. 6. His reading of the five inscriptions are far more accurate than earlier studies, though he did not provide any interpretation or translation even not in Chinese.

Our translation followed the readings by Zhou Da-fu in general, with several modifications based on the spot study of the photographs and the inscriptions.

John Anderson in his *Catalogue and handbook of the Archaeological collections of the Indian Museum* Part – II records that the inscription (B. G. 122) was discovered in the summer of 1880 under twelve feet of rubbish surrounding the great temple. He further notes that it is “an inscription in Chinese on a flat slab 2 feet 8.05 inches height, the head of the stone being triangular and 1 foot 6 inches in breadth and 3.05 inches in thickness. The triangular portion contains three recesses, the middle recess is occupied with the seated figure of Buddha in the *bhumisparsha mudra* in which he attained Buddhahood and each lateral recess with the six-armed female figures probably Vasudhara”. But the two figures of the goddess represent, according to Cunningham, the figures of Vajravarahi.² On closer examination the deities seem to be of Marichi – the solar goddess.

According to Prof. S. Beal as quoted by Anderson in his catalogue “this inscription dates from the *Tien-hi* year of the reign of Chien Tsung of the Sung Dynasty i.e., 1022 A.D., and records that a priest Ho-Yun, went to Buddha Gaya with a view to worship the sacred relics of the place, while there, he carved a stone pagoda, with a surmounting pinnacle and a square base, thirty paces to the north of the Bodhi tree, in honour of the thousand Buddhas. He left behind him the record before us, which in praise of the three bodies of the Buddha and the three thrones they occupy. The three bodies according to the inscription are Fa-Shin (*nirmanakaya*), the Po-Shin (*sambhogakaya*) and the Fah-Shin (*dharmakaya*). The inscription continues in the same laudatory phrase and ends with the statement that in the year above named, viz. 1022, two men called I-tsing and I-lin were sent from the eastern capital with a *kashaya* garment in a golden case which they hung above the Bodhi tree, and which fact is recorded as supplementary to the hymn of praise of Ho-Yun.”

We now place before the readers, our translation of the inscription and comments thereon.

This is a record of a description and hymns of the bodies and seats of the Buddha by Ke-Yun, a monk from Xi-he of the great Song country, who is specialized in preaching *sutras* and teaching *shastras*. Ke-Yun left the faraway empire home to pay his homage to the land of the Buddha. Having seen the traces of miracles, how can he help making meritorious donations and voicing his praises? Therefore, Ke-Yun used all the resources left from the trip to have a *stupa* with the thousand Buddhas carved at a place some 30 paces north of the Bodhi tree. It makes the meeting place of the three (of the Chinese monks?). Money and clothing are not enough to express the feeling. Receiving the teaching of *dharma*, one is humble and respectful, but he also beeds to respond. Here he utters some worthy words to praise the Birthless.

(Hymns are omitted)

Using my worthless words with forms, I eulogized the formless supreme knowledge in the same way of measuring the sky with an eyelash of a mosquito. In spite of my humble position, I just want to express my faith and devotion. All the merits incurred by my eulogy of the three bodies of the Buddha and the descriptions about the numerous sacred and outstanding achievements of the Buddha should bring blessings back to the bright ruler of my country to extend his life. The emperor of the great Song humbly wishes that his life should be endless as the water of the ocean, where waves roll along forever, neither increase nor decrease, and his blessings are as abundant as the heavenly mountain which is high and grand. My emperor also wishes that he should come to this place to sit on the seat of *Rang-gu* (this should be a name of a Buddhist figure, which is unidentifiable so far), thus in the future times at other places, his name should share the honour of Yue-gai, (This is an elder of Vaisali, who sought the aid of Amitabha, Mahastamaprapta, and Avalokiteshvara, to rid of his people of a pestilence. His name appears in Chinese versions of *Vimalakirti sutra*, but its Sanskrit form is not available. Here the emperor meant that he would be honoured with helping his people by getting helps of Buddhist deities from India, in the same way as Yue-gai did.) More hymns praising the traces of miracles are included in my travel records. This is recorded in the sixth year of Tian-xi era of the great Song (A.D. 1022).

Yi-ging and Yi-lin, the two monks from the Dyana monastery, for expanding teachings on the Right path, Dongjing (the capital of the Song Empire), came along with me for the pilgrimage to the land of the Buddha and held a *kashaya* with golden decorations to cover the throne of the Buddha in the Mahabodhi monastery. This is done and recorded for an everlasting memeory.

The other inscription (B. G. 133 & A 20647) in the collection of the Indian Museum is a slab of stone 19.50 inches in length and 10.50 inches in height with eight figures of mortal and future Buddhas viz. Sakyamuni, Kashyapa, Kanaka, Krakucchanda, Visvabhu, Sikhin and Vipasyin (the seven mortal Buddhas) and Maitreya, the Buddha to come in future, respectively. The inscription is continued round the sides of the pediment on which the figures stand. S. Beal is of the opinion that the inscription gives the name of Chi-I, a priest of the great Han dynasty who travelled through India to distribute 30 thousand books and arrived at Maghadha where he gazed upon the *vajrasana* – the diamond throne and other sacred vestiges of his religoin. John Anderson expressed his doubt of Beal's reference to the Han dynasty which according to the latter ruled in China at the end of the 2nd century A.D. Cunningham has put it straight by ascribing the date of the inscription as 'not older than A.D. 1000'. We record below our translation and interpretation of the text of the inscription.

Monk Shi-yi from the great Han states first vows to encourage 300,000 men to improve themselves for a better birth in the future life, to distribute 300,000 volumes of the *sutra* for better births, and to recite the same volumes of the *sutra*. The merits caused by the above efforts should enable all of us to return for another birth in the inner court of the *tusita* heaven (where Maitreya dwells). Now I have reached Magadha to worship the *vajrasana* throne. Here I met the head teacher of the Dharmalaksana sect Gui-bao and other respected teachers. We all vow to be born in the inner court of the *tusita* heaven. Among the 300,000 people (who will go there), the first one is Gui-bao, the second should be Zhi-yi, the third one should be Guang-feng, followed in sequence by others according to their status :- Hui-yan, Chong-da, Quan-zun, Yuan-zhen, Yi-xian, Hui-xiu, Zhi-yong, Feng-Sheng, Qing-yun etc. We all want to serve Maitreya personally. Today we have much good opportunity to get together and that we have the seven Buddhas made and have the event recorded.

Indian Museum at present possesses two more Chinese inscriptions which we do not incorporate in this paper, the reason of which has been stated above. In the year 1961, a small copper plate bearing a few Chinese characters with a ring (A 23690) was acquired through purchase from Sri S. T. Srivastava Gopalachari of Madras. Since this plate does not contain any historical information but a Buddhist religious formula we abstain here from including its text and translation.

REFERENCES

1. Cunningham, A – *Mahabodhi*, pp. 72
2. Plate XXX Fig. 1 of *Mahabodhi* by Cunningham, A.

THE SAHARA SAMAJ : AN EFFECTIVE CONSTRUCT OF THE SAHARA POLITY

SHYAMAL KANTI SENGUPTA

ARNAB DAS

SUBRATA SANKAR BAGCHI

Abstract : A section of the Sahara tribe in adjoining areas of Dhenkanal and Keonjhar districts of Orissa is known to persist in organising the group historically on the basis of their position in the local social hierarchy and the issues of ethnic identity. The polity is one such issue. The polity today, oriented on the old and recently emerged traditions of customs, rules and reforms, has been traced out in terms of its constitution and operation. The field method required an incessant search and verification of the data on the effective political, juridical, social and cultural aspects. It demanded prolonged field journey in those villages and successive contacts with significant community personnels. It enabled the investigators to reach the presented level of empirical understanding about the polity of Baita section of the Sahara of the region, in general and of Pal Lahara, in particular.

I

IT was really a big journey in the field, and attempt to bring out a wide community network. The journey was held to be a plan of passing through the process of looking into a tribal polity, a meaningful community affair, not fully exposed to the others. The social relations differentiated in scale and the variegated specialisation of political roles have been classified by the anthropologists. This was how the anthropologists suggested the concept of polity which may vary from one society to the other and also over time within the same society. A jural community, as the Sahara community of the present investigation, is the widest-scaled network of authority relations. The network inevitably acts upon a set of interrelations among roles (Middleton and Tait 1958). A tribe has also been said to comprise of a number of constituent polities. Otherwise, a tribe may be a part of a larger multiethnic polity (Naroll and Cohen 1973). Therefore, the age-old development of the polity of the Sahara got the attention. Sahara samaj, the polity of the Sahara, covering certain areas of Dhenkanal and Keonjhar districts in Orissa had to be traced out. An earlier duty was to identify the sections of the local Sahara of which the *Baita* Sahara got the present focus. The plan was designed with a view to finding out the major functions and functionaries which cause the polity work. At the same time the notable observaton about the diachronic continuity of the polity from one period to another enabled the investigators to obtain the main thrusts of ethnically organised polity. They stood for the rules and reforms in certain political, juridical, social and cultural spheres. Thus, it became an incessant endeavour to uncover and verify the constitution of the present polity and its other effective aspects. It was a matter of contacts only with the supreme authorities of the divisions of the polity. Finally the division of the polity of Pal Lahara was taken as a unit for intensive probe. The whole field work then involved mainly the interactions of the investigators with the 'significant' individuals of the community. These individuals who are the elder members knowing much about the community. They hold authoritative roles and large number of contacts; most of the Sahara people can recognise them as the significant members of the community. It was experienced that there was no substitute for the concrete interaction of the investigators with that network as much as possible. The network nature of the object of investigation as well as the investigators' effort of delving into the reality necessitated the large spatial coverage

of the fieldwork. The plan of work inevitably caused the travel from one village to the other, situated miles apart. The process of investigation depicted so far, indicates also the concerned methods and techniques clearly. As the investigation proceeded, the enlarged network and its nature and functions got revealed simultaneously and concretely. Furthermore, it was also gradually realised why and how the polity or its associated institutions and their functions are not fully open to the others. Any 'significant' personnel of the polity might disclose many secret facts to the investigators with the belief that he or the community would not be betrayed. Then it becomes an ethical question of how to deal with the facts. Thus it is better to maintain that the following account is to be considered as encompassing more or less the open aspects of the major institutions and functions of the polity of the Baita (or Basu) Sahara inhabiting the border areas of Dhenkanal and Keonjhar districts.

II

In part IX of the Scheduled Castes and Scheduled Tribes Lists (modification) Order, 1956 relating to the state of Orissa, entry 59 of the list relating to scheduled tribes mentions *Saora*, *Savar*, *Saura* or *Sahara*. It has also mentioned in the order that the community name has differently been spelt in different areas. Russel (1906), like Risley (1891), has also adopted the name *Savar*, but has given a number of variations : *Savara*, *Sawara*, *Saonr* and *Sahra*. The people studied in Pal Lahara is well aware of their identity with *Savar* or *Savara*. At the same time they utter the name of their group as *Sahra* or *Sahara*. *Saora* (e.g. Yates, 1931; Elwin, 1955; Patnaik 1955), *Sauras* (e.g. Cunningham 1884), *Savara* (e.g. Thurston 1909) are also the well known spellings of the name of the tribe, inhabiting the regions of Orissa, Bihar, Madhya Pradesh and Maharashtra. They are also found in Andhra Pradesh, West Bengal, Assam, Tripura, Uttar Pradesh, Rajasthan. According to the Census of India, 1961, they number 3, 11, 614 in the province of Orissa, the main homeland of the people. Elwin (1955) provides the scholars with an exhaustive list of 27 variations of the name, prevalent in different parts of the country. The term *Sahara* is also included in that list.

The opinions regarding their linguistic background differ. Authors like Cunningham (1884) considered them Kolarian. Dalton (1872) and Risley (1891) classified them as Dravidians. Grierson (1906) determined the language as the Munda branch of the Austro-Asiatic subfamily of Asiatic family language. All such assessments have lost relevance to some extent, in the present context because the *Sahara*, studied has adopted the Oriya language, the dominant one in the province.

Whatever be the past occupations and means of subsistence, the plain and terrace cultivation, hunting and gathering etc. (e.g. Elwin, 1945, 1955; Bell 1945; Thurston 1909), the cultivation now dominates their livelihood activities. Most of the people are marginal farmers and wageearners in agriculture and elsewhere (both as casual and contract labourers). Some of them are small farmers. They can inform that shifting cultivation was their one of the earlier major occupational engagements. But, now the *Sahara*, especially those settled in the plain are reluctant to pass through any major regular interaction with the forest in the forms of shifting cultivation, hunting, collection and use of forest produce etc. In spite of this fact they have retained the traditional extraction of forest resources for both the domestic consumption and sale in the market.

The history of the tribe from the earliest time has been described by many authors notably Elwin (1955). Thurs (1909) and Bell (1945). Pliny makes mention of *Suari* and Ptolemy of *Sabarai*. According to their account, it was a well known tribe in the beginning of the Christian era (Cunningham, 1884).

There are many references to the tribe in Hindu mythology, as well as in ancient and mediaeval literature. In the Aitareya Brahmana, they are spoken of as the descendants of saint *Vishvamitra*. A similar reflection of this legend is found in thirteenth part of the Mahabharata (Mazumdar, 1963). According to Muir's Sanskrit Text II, 62, (Cunningham, 1884) they constitute a well known aboriginal people with their own dialect named *Sabari*. Reference is also found in Ramayana to *Sabari* or *Seori*, a Savara woman, who succeeded to offer hospitality to *Rama* during his wonderings in the jungles (Elwin, 1955). According to Risley (1891) the *Parna Savaras* or the leaf-clad *Savaras* described by Varaha Mihira (about 550 A.D.) were supposed to be the leaf-clad Juangs, another group of the same community. The present empirical finding has also supported this interpretation.

Many references bear out the information that there were some principalities and states in and around Orissa held by the tribe. A Sahara named *Dhenka* is said to be the source from what the former princely state of Dhenkanal has been derived. It is told again that *Dhenka Sahara* was captured by Singh Bidyadhar in the middle of 17th century and the area was conquered by him. The principality of Pal Lahara is also said to be associated with the same tribal community (Census of India, 1961. Vol I.). O'Malley (1911) asserts that the original image of *Jagannatha*, the famous deity of Puri, was discovered in the land of the Sahara where its priest was a Sahara, named *Besu* or *Vishwabasu*. It has also been supported by the people studied. Certain variations of the elaboration of the associated legend have been obtained. The worship of Jagannath of Puri, still, remains an unaltered fact. The term, *Basu* is supposed to have derived from such historical context. The *Baita/Basu* Sahara of Pal Lahara takes pride in remembering all the mythical tales associated with Ramayana and Mahabharata. The periods of history in terms of legend viz. *Dvapad yug*, *Treta yug* are used to categorise the association of the tribe with the great mythical figures and families. *Grihaku*, the Sahara *Raja*, reborn *Angad* as Sahara, the friendship between the banished *Pandavas*, Lord *Krishna* and the *Kritika Shabaruni*, the hospitality of *Sabari*, the great sahara woman etc. are associated with all those legendary contexts. They say that *Ekalavya*, the great archer of Mahabharata was a Sahara. Finally, they do not fail to give emphasis on the tale of *Jagannatha*. *Neela Kandara*, the main Sahara deity was turned out to be *Jagannatha* in *Neelachal* or Puri. They have alluded to the well known hymn mentioned below:-

Bhakata Bhaktire gai chalichi,
Neela Kandara bihari Jaganninatha,
Dekhi purila sakala monoratha,
Thilo Sabara Debostha Gharabare,
Aaji Shedina Katha mone pare,
Jai Jagannath Swami,
Nayan Patha gami bhabatu me.

Thus, Dohori, a clan of Sahara still remains the priest in village level worship, whatever be the composition of the village, including caste people apart from the tribals. Their festivals and ceremonies, held at present, ascertain the fact that their ageold, powerful attachment with the local religion has bearing on the present tradition. The main festivals are *Rajah* (May-June), *Gambha* (July-August), *Paus* (December-January) and *Makar* (January-February). Four main ceremonies are *Lakshmipuja* (January-February), *Pitripuja* (March-April), *Mangara* (March-April), and *Thakurani* (April-May).

According to Hunter's statistical account and map in Orissa Gazetteer, the tributary states of Talcher was on the south, Dhenkanal on the south-east and Keonjhar on the north and east of Pal Lahara separated it from the distant ones like states of 'Atmalik', 'Angul', 'Hindol', 'Sukinda', 'Morbhanj' etc. Thus Orissa appeared to present a cluster of tributary states.

Before entering into the polity of the concerned Sahara group (or *Baita* Sahara) of Pal Lahara it is necessary to incorporate the traditional explanation regarding the historical background of Pal Lahara associated with the Sahara as well as to describe the locality of Pal Lahara. Popular belief runs that a Rajput of Dharanagar named Santosh Pal was the first king of ruling family here. On his return from the pilgrimage to Puri, Santosh Pal visited Pal Lahara and stuck in struggle between two aboriginal tribes. Santosh Pal was selected by the Sahara, one of the warring parties, as their future king. They hid him under a heap of straw which is locally known as *Pala*. The Saharas emerged as victorious and thus crowned him as the king. The Saharas thus supposed themselves as the king-makers. The name Pal Lahara is said to have come from the very fact that the Rajput chief was hidden under a heap of straw, called *pala*.

Pal Lahara, the northernmost police station of Dhenkanal district of Orissa, lies between 20° 31' 0" N and 21° 41' 30" N latitude and between 85° 3' 0" E and 86° 5' 0" E longitude. On the northern boundary lies district Sundargarh and Keonjhar district lies on its north-east. The district of Cuttack ranges from the east to the south. Bolangir district is situated on the west and Bandh-Kaondmals district is situated on the south. To the south of Pal Lahara police station lies khamar police station of Dhenkanal. On the remaining border of the police station, Sambalpur and Keonjhar district are situated.

At present in accordance with the provisions of the Orissa Panchayat Samiti and Zilla Parishad Act, 1959, panchayat samities were established. If Pal Lahara is considered as a block, there are 16 panchayat samities, started functioning from 26th January, 1961. As per 1981 census, the population of scheduled tribe in this block is 30,397 whereas the total population of Pal Lahara is 82,567. Among these sixteen gram panchayats Nagira, Balipasi, Jharbera, Saida, Chasa Gurjang, Injidi etc. have the higher number and percentage of tribal inhabitants. Other than Sahara, Juang, Kol, Bhuiya etc. are other important tribes of the area. The national highway (NH. 6) and Makda river have passed across Pal Lahara.

III

Crossing the border of Keonjhar district by the national highway (NH. 6), one may enter east of Pal Lahara police station of Dhenkanal district. One will find the thickly forested and rugged hill range very soon. The most notable and the highest hill is Malayagiri (3,896 ft). One can not miss noticing it as towering above the others. Surrounding this hill a number of villages may be seen almost in the midst of the forest greenery.

Gouranga Baita is one of the inhabitants of Samal village situated at the foothills of Malayagiri hill in Pal Lahara police station of Dhenkanal district. He is known to be the *Baita* or the king of eighteen *Khandas*, the clusters of villages and recognised as the man of highest prestige in the Sahara society. In fact, he is no more a real king, but the living descendant of the king. The person is not assigned to any specific activity and duty. The practice of paying any tribute or so to the king on behalf of the common Sahara people does not exist any more. Yet, the social symbol of the king is kept up by the people. A strong spirit of the Sahara of Dhenkanal and Keonjhar about the past royal era has

been observed to exist. The elder villagers may be seen to involve themselves with the issue of recollecting correctly the previous Sahara chiefdoms and the ranking order of them. One informant may vary from the other, but everyone can provide certain meaningful information in order to establish his view. All the significant personnels (headmen, messengers, elder wise individuals, individuals in charge of higher offices etc.) living in the villages around Samal take little time to recall the names of the old clusters of the villages belonging to the Pal Lahara kingdom. Samal belonged to 'Bara Baita', a very prosperous zone: the subjects of the zone had to pay higher land tribute in comparison to the zones like 'Penchamundi', 'Charas' etc. The tribute was determined on the basis of productivity of cultivable land. The informants differ regarding the ranking of the past chiefdoms of 'Mayurbhanj', 'Keonjhar', 'Koraput', 'Pal Lahara', 'Talcher', 'Deoghar', and smaller ones like 'Tigria' and 'Aatmalik', 'Mayurbhanj', is however, placed on top.

They had their autonomy until they got into the clutch of the British colonialism. The administrative control of the chiefdoms was shifted from the freedom-loving tribals (e.g. the Saharas) to the non-tribal patrons (e.g. *Babu*) of the British. They can easily call up different aspects of that dynasty of the *babus*. The later descendants of that dynasty of Sachidananda Ganeshwara Pal and Sarat Chandra Mani Pal are still the inhabitants of the locality. They have the similar problems of identity as the Saharas have their own. The only difference between the two is that for the Sahara it has become a crisis of the community and for the *babus* it relates to the crisis of the status of individual families.

The Sahara enjoyed their importance and dominance in almost all the prominent social, religious, political, cultural and other affairs at the regional level of Orissa. After that downfall and even after the independence of the nation their lost glory was not regained. Only the worship of *Jagannatha* in Puri, starting from cleansing the holy shrine upto the great procession during *Ratha* festival is reminiscent of that great past and they get enchanted with the spirit of the past.

In fact, the tradition of the Sahara has been perpetuated. It has its present order of existence. The ageold attachment with the great Indian legends and literature, the position in the local social hierarchy, their own past royal tradition in different spheres of life (e.g. juridical, religious, economic, political etc.), the ethnic heritage of a tribal group have their respective contributions to the complex network of their present civilian life of the Sahara. Those aspects of the life, governed by their own codes and customs have their elaborate role in shaping the ethnic background today.

Therefore, in conformity with the great historical past, the Sahara has its population, differentiated into certain endogamous groups. Each has its own characteristic features and one group is easily identified by the other.

- (i) *Baita Sahara* (or *Basu Sahara*) is the settled community, primarily hunter-gatherer and now cultivator of the land in their occupation. The *Baita* clan sometimes proclaims its distinction from the *Basu Sahara* which consists of some other clans. They all are identified, however, by the highest honour of the king, the *Baita*.
- (ii) *Jara Sahara* is characterised by its occupation of blacksmithy, hunting and fishing. They are more or less settled.
- (iii) *Bullla Sahara* is characterised by the occupation of snake charming, nomadic life (*buli buli kataili*) and the smallness of the groups forming this section of Sahara.

- (iv) *Patra Sahara* includes certain unidentified section of Sahara and local tribal groups like Juang who would wear the leaf-garb. They are placed at the bottom of their own social hierarchy.

It is not very clear whether Baita Sahara had a separate group identity of its own or not. At present in explaining the hierarchic structure of the Sahara they try to proclaim a distinction from the Basu Sahara. But from the family level to the higher organisations (like village, larger political organisation etc.), the Baita Sahara can now be identified by the chief clan of a tribal group and by several other clans, as well.

- (ia) *Baita* is the only and nothing but the chief clan. They have a distinct genealogical structure. Most of the village headmen and the higher authorities come of this clan.
- (ib) *Dhori*, another clan is the sole representative of the priesthood.
- (ic) All the other clans of *Kondal*, *Handiari*, *Behera*, *Gauntia* and *Khatua* are identified as the first category subjects of the king.

So there is really a finer line of division between the Baita Sahara and Basu Sahara (constituted by clans other than Baita). Clan exogamy is the only practice among the Saharas of this section:

IV

All the aforesaid clans live together in a hamlet called *Sahi*. It is a part of a big village consisting of the *sahis*. In a hamlet some or all clans have their representation in the lineages. A *Sahi* is headed by a *mukhiya*. Some neighbouring *Sahis* are conjoined to form the higher unit of *Sangha* or *Panchapara*. Each *panchapara* is administered by a *Sampadak*. The *sanghas* constitute an *Anchala* or *Garjat*. Each *anchala* or *garjat* is chiefly represented by a *Sabhapati* (President) and a *Sampadak* (Secretary). A few *anchalas* constitute the *Kendra* (centre). The *Upadesta* (advisory board), comprising of *Kendriya Sabhapati* and *Kendriya Sampadak*, has been made the chief authority of all civilian aspects of the *Baita Sahara*. The *Behera* (messenger) is another important functionary in this organisation.

The above abstraction may be seen in its concrete exemplification. There are four *garjats* or *anchalas* of the *kendra* concerned. (i) Talcher (ii) Angur or Angul (iii) Keonjhar (iv) Pal Lahara. At present, of the four *sabhapaties* and four *Sampadaks* two posts are held by the inhabitants of Dereng village, two by the inhabitants of Deuldia village, one each by the inhabitant of Baimda, Deonria, Kaddapad, Kurmura. Mulia Dohori of Kolindar village is the *kendriya sabhapati*. *Kendriya sampadak* is Gurucharan Baita of Tambur village. The individuals from Dohori, Behera, Gauntia clans occupy the posts at *anchala* level.

As the present work is mainly concerned with the Pal Lahara *anchala*, the following list denotes the *Sahis* and *mukhiyas* of four *panchaparas* forming the *anchala*.

	Sl no.	Village (<i>Sahi</i>)	Headman (<i>Mukhiya</i>)
Panchapara, 1: headed by Punia Kondal of Samal village	1.	<i>Janapasi</i>	<i>Handia Baita</i>
	2.	<i>Gurupada</i>	<i>Debananda Baita</i>
	3.	<i>Kerjengah</i>	<i>Juango Baita</i>
	4.	<i>Tompor</i>	<i>Dutia Baita</i>
	5.	<i>Samal</i>	<i>Punia Kondal</i>

	Sl no.	Village (<i>Sahi</i>)	Headman (<i>Mukhiya</i>)
Panchapara, 2: headed by Bangshidhar Baita of Nagura village	6.	<i>Kantala</i>	<i>Pathru Dohori</i>
	7.	<i>Jamra</i>	<i>Sarat Chandra Baita</i>
	8.	<i>Namgaon</i>	<i>Hatia Baita</i>
	9.	<i>Naguraon</i>	<i>Kumoro Baita</i>
	10.	<i>Khturi</i>	<i>Basagu Baita</i>
Panchapara, 3: headed by Baisakhu Baita of Jhimripali village	11.	<i>Batisuan</i>	<i>Damo Baita</i>
	12.	<i>Jhimripali</i>	<i>Baisakhu Baita</i>
	13.	<i>Pattatangar</i>	<i>Kustono Baita</i>
	14.	<i>Nuamandi</i>	<i>Sapana Baita</i>
	15.	<i>Gutabhuin</i>	<i>Gubri Baita</i>
Panchapara, 4: headed by Batakrishna Baita of Kurmura village	16.	<i>Kurmura</i>	<i>Jharia Kondal</i>
	17.	<i>Ruhira</i>	<i>Kangrui Baita</i>
	18.	<i>Tambuin</i>	<i>Jogeshwar Baita</i>
	19.	<i>Barsada</i>	<i>Kandru Baita</i>
	20.	<i>Bhimria</i>	<i>Kandurpa Baita</i>

The names of the *mukhiyas* suggest that the headmanship is almost under the exclusive possession of the Baita clan. Only the cases of Samal, Kurmura and Kantala mark the exception. The common villagers also term the constitution of these twenty villages as their own Sahara *Samaj*.

All the posts are hereditary but in any occurrence, like the absence of legal heir to the post, an election or a selection is arranged. The posts are honorary, excepting the post of Behera. He is paid two *Pais* (1kg) of paddy from every family.

The Baita or the king as individual has nothing but an integrative function in the Sahara *Samaj*. The highest prestige is ascribed to him. He has little interaction with the effective political organisation so also with power. His presence is required in the high level meetings of the community. The hereditary position of Baita has been maintained through generations. They used to hold a ceremony for the initiation of the king of a new generation. An umbrella is kept overhead. The king under the shelter of the umbrella is crowned and one rings a bell. But with the passage of time, other luxurious items have been cut off from the initiation and other ceremonies associated with the king. After the death of Pathru Baita, the former king and after *Sudhakarma* (mortuary pollution period) was over, the *kendriya sabhapati* was informed by the *mukhiya* of Samal village through the *sampadak*. The *sabhapati* decided the date of the initiation of the new king. This message was taken to all the *mukhiyas* of the four *anchalas* by the *behera*. It took four days to inform all the villages. *Behera* got 1 mand (500 gms) of grain. The assemblage of the Sahara people was made in Pattatangar. Gouranga Baita was also garlanded before the cheering and clapping of the present Sahara personnel. Two rules are mainly prevalent in the initiation of a king: (i) only the male members are eligible for the post, (ii) if any *baita* has got no male heir then his brother or brother's male heir will inherit the post.

At the time of accepting a new president (*sabhapati*) officially, the meeting at the *kendriya* level will be held. In presence of all the informed important personnel a piece of cloth called *luga* is offered to him. In case of the initiation of a secretary (*Sampadak*) only a garland is offered. There is the provision for selecting an individual other than the heir of the deceased or unable personnel. However, most of the *mukhiyas* in most of the cases go in for the descendant of the previous person who held the post. At the time of officially recognising a *sahi-mukhiya* or *behera* in the same kind of meeting no material token of honour is presented to him.

There are some criteria of any leader in general. The presence of those criteria in an individual *Sahara* may govern the decision of the important persons in a meeting in favour of that individual whom they newly select for the post; (i) cool and controlled temperament, (ii) goodlooking and commanding appearance, (iii) well accepted amicable personality, (iv) mitigative attitude towards judgement, (v) ethically high wisdom (vi) loyalty to the traditional norms and customs and (vii) a near-ideal perfection of the personal image are all those subjective criteria which match a leader of the *Sahara*.

V

It is perfect to perceive the functions of the organisations comprising of the levels from the *sahi* to the *kendra* as covering mainly the civilian aspects. In order to keep it on, they have the rule of arranging meetings to channelise the order and the functionaries have the duties to maintain the society in conformity with the orders, determined by the authority. The *Panch* at the village level comprising the *sahi mukhiya* and other elderly persons of a village is the first level; *Sangh Panch*, the second level, involves the *sampadak* of *panchapara*, the *sahi mukhiyas* under the jurisdiction of the *panchapara*, the *behera* and other well known elderly inhabitants of those villages. The next level, the *Sabha*, has the committee constituted by all the *sahi mukhiyas* of the villages of the *anchala*, the heads of the concerned *panchaparas*, the *beheras*, the *sabhapati*, *sampadak* of that *anchala*, and some other renowned wise elderly individuals co-opted into the committee. At *kendriya* level the *Mahasabha* consists of the central committee which includes all the aforesaid functionaries and the *kendriya sabhapati* and *sampadak*. The latter two meetings of *sabha* and *mahasabha* definitely have different degrees of significance compared to the two former ones. The *sabha* and *mahasabha* are held either annually or biannually depending on the number of pending cases of disputes, unresolved in the two lower levels. The urgency of any social reform or political decision may make the meetings summoned hurriedly. Each *sabha* or *mahasabha*, according to the accounts of last three years, starts at about 7 a.m. in the morning. It continues almost upto 4 p.m. A feast is also held. The village which is the venue of the meeting takes the responsibility to carry the meeting through. The cooks, the helpers, the major subscription to the fund for the meeting or all the necessary arrangements are provided by the villages, though all the villages have their optional contributions to it.

Before looking into some recent trends and motivations of this organisation, the ageold issues of crime and punishment may be discussed. The complaints are reported to the *mukhiya*. The settlement of every dispute attempted from the lowest court of village *panch* to the supreme court of *mahasabha*. It is the responsibility of the *mukhiyas* to report the unresolved complaint of *sabhapati* and *sampadak* separately. *Sabhapati* is given the priority to decide whether the case is valid enough for any further consideration. Whatever be the decision which comes about after his discussion with the *sampadak*, it is communicated to all the *mukhiyas* within a few days. The villages start taking preparation as soon as the decision for holding any meeting gets through. The procedure of organising any meeting or channelising the decisions taken by the authority follow the same centralised pattern.

According to the last three years, the commonest types of the offences dealt with in those courts (*Jatian Sabha*) are

- (i) elopement
 - (a) by the member of their own community
 - (b) by the member of other community
- (ii) illegitimate birth
- (iii) divorce
- (iv) desertion
- (v) beating of the younger brother's wife
- (vi) beating of the elder brother's wife

These are all minor offences.

Offering a communal feast is the most easy relief of an accused. In the extreme offence, excommunication (*Ajatia*) is ordered. The convict is not allowed to mix with any member of the community, no one is even allowed to meet him, he is no more permitted to gather food from the place where other community members go in search of it and he is prohibited from taking drinking water from the common sources. Other families of the community become reluctant to have any new marital relationship with the consanguinal kin of the convict. If he appeals for the release from his punishment he is taken to the shiva temple, situated in Deuldia. He offers his prayers. He makes the offerings like coconut, rice, flowers etc. He is then asked to wash his mouth with cowdung mixed with water. Then he is considered purified. Again, he has to bear the expenditure of a community feast. The menu would be simple. He is then accepted by the community members. At present the fine ranges from Rs 50/- to Rs 500/-.

Two of the most common serious crimes are

- (i) prohibited inter community marriage and
- (ii) murder.

Marrying a person of other community is such a great offence that the couple is immediately excommunicated (*ajatia*) and are never brought back to their community. The whole family and consanguinal kinsmen suffer for this. Marital relationship with the concerned family and kinsmen are prohibited. In the case of a murder, initially they do not want to expose it to the people outside their community. Larger punitive fine and feast, and tougher process of atonement are ordered. But in most of the cases the news comes out. He is then taken to the panchayat or handed over to the police. He may also be excommunicated. The cases of murders were obtained where the convicts had been treated sympathetically by the community while they were punished by the courts. One convict was helped to collect money for carrying on the fight against the charge in the court. If one convict is released in his lifetime or the community succeeds in saving the person from the laws, the person may be returned to the community. The purification process becomes a tougher one. His head will be shaved and washed with cowdung. The leaves of *Tulshi* plant are mixed with water. *Tulshi* leaves and water are sprinkled on his head, face and body. The event is called *Chandrayana*.

The women's offences are dealt exclusively and primarily by the *sahi mukhiya* in absence of any other male co-villager. Most of the disputes among the women are resolved at the *sahi* level.

These are all regarding those aspects of their traditional life of which almost all the elderly sensible Sahara persons are aware of. But the personnel at different levels of the authority in the organisation can explain that some new functional requirements have been realised; newer codes have been emerged in the form of constitution of new organisation and the rules of new reforms. The codes are found in some periodical collections, being termed as *Sabhabahi* as a whole. It is heard to be available in the personal collection of the non-tribal king family of Talcher. The functionaries at the *anchala* level or *kendriya* level did not hold with those who believe that it was the original *Sabhabahi*. The present investigators were reported that whatever be their original *Sabhabahi* the outline of the present guidance of encoded rules may be found in some other *bahis* or collections. The presently relevant *bahi* is the summary work of all their norms, customs and rules reviewed in the meeting (*mahasabha*) held in 26.4.1970. The venue was the village Telkui, situated in the post office of Deuldia of Keonjhar district of Orissa. The fifteen rules comprehend,

- (i) abolition of addiction
- (ii) abolition of illiteracy
- (iii) eradication of superstitions
- (iv) permitted and prohibited edibles.

They all may be grouped under the reforms aimed at negating certain practices, assumed to be harmful.

There is the group of rules regarding marriages as :

- (v) marriage rules explaining the necessary expenditure on behalf of both the bride's family and groom's family,
- (vi) regulatory rules of marriage practices mentioning the permitted forms of marriage.
- (vii) prohibition of kidnapping of girls for marriage. Political organisation has also been concerned in the rules like
- (viii) determination of the members of authority,
- (ix) election procedure of the chief president,
- (x) mediators elected for the sake of communication between the community and the government and
- (xi) prohibition of migration of convicts from one area to another.

The tendency to elevate the social standard to the available Hindu model is evident in the following rules :

- (xii) to dress up in the Hindu style,

- (xiii) prohibition of killing of the cows and unnecessary killing of insects.
- (xiv) code of conduct of married and unmarried womenfolk. Another specific rule of reform stands out in its own right,
- (xv) encouraging the sense of responsibility and duty.

In a much recent period two meetings (*mahasabhas*) were held in Pal Lahara *anchala* on 20.3.1986 and 23.3.1986. Some of the earlier rules were amended. This endeavour resulted in the following ten resolutions :

- (i) Complete prohibition of alcohol consumption of womenfolk.
- (ii) Improvement of educational facilities by taking help of governmental agencies.
- (iii) prohibition of eating unwanted edibles to keep oneself and the society healthy.
- (iv) During marriage least expenses are to be made, so that the family does not face any pressure economically.
- (v) To visit the daughter-in-law's family, maximum four people are allowed.
- (vi) During the occasion of engagement of marriage the custom of compulsory transaction of goods is to be prevented.
- (vii) In marriage ceremony also, offering of alcohol is to be prohibited.
- (viii) If child death occurs, one does not compulsorily need to organise a funeral feast, but in case of the death of an elder individual the feast is compulsory. Meat as an item of feast is optional.
- (ix) If cow or fly is killed there, purificatory rites are to be followed.
- (x) Nobody is to be allowed to wear the garment called *Lungi*.

It is written in this above report that the welfare of the community of Baita Sahara is intended by all such attempts. It also includes that the committee heads are authorized to amend the laws and rules to promote better ones. For brighter future it is necessary to take the blessings of Lord *Jagannatha* and praying for His benevolence (*Namastho he Jagakaliya amo pronoti neu durdinere jatikui sohay hou, jai Jagannatha*). Thus, it ends with the above prayer and optimism; "Oh, lord *Jagannatha*, accept our worship, you are our shelter in the period of disaster".

VI

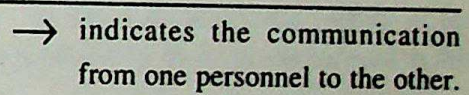
It is now clear that the principal effort of the present write-up is to elucidate the empirical findings based on the effective aspects of the polity of one commanding section of the Sahara in areas of Dhenkanal & Keonjhar. the field work was made intensively in Pal Lahara, the northern police station of Dhenkanal district, a spatial division of the Baita polity as well. There is no intension to claim that the coverage of the study encompasses all the possible aspects of the polity or no further phenomenon will grow up and emerge as more effective in vindication of the dynamics of their group identity. Inspite

of the diversity and vividness of the structure and function of this centralist polity described. they are not so rigorous and pronounced, if viewed in the daily proceedings of the wider local political, juridical contexts. The local caste communities have much stronger participation in common civilian affairs. The observation of the present panchayat situation made the fact discernible. The Baita Sahara, nevertheless, has also succeeded in perpetuating a trend of maintaining the bridge between the tribal and caste identities, based on their ageold position mainly in the local political and religious traditions. The social hierarchy expounded by the local caste people places the Sahara just below the high-ranking Brahmin castes. Kshatriya status is ascribed to the Sahara. So, the non-Brahmin, non-kshatriya rich agriculturalist or large farmer castes have the social status below the poorer Sahara. Thus, despite their ethnic orientation of the polity, the Sahara holds a ranked society, considered either from within and from without. Thus, tracing their own position in Hindu social order and on the contrary, the promulgation of distinct ethnic identity might have resulted in doubled bind. It is, however, difficult to predict how far these two converse forces would be able to accomodate each other and to function for the cohesion and stability. Furthermore, the enormous impact of the stronger local caste communities, gradual loss of some cultural aspects like their language etc., the impoverishment and the inevitable consequences of dependence on the outsiders and the consistent entry into the local agrarian structure collectively and political structure individually, may all act as the conditions, not congenial to the nature of this polity. In addition, the rising rate of formal education, growing urban industrial environment etc. may cause the further estrangement from the living myths of *Rama*, *Jagannatha*, *Sabari*, *Angada*, *Grihaku*, *Viswabasu* and so on. Until now, it really remains a tussle between the myth and the reality in the effective organisation of the polity of the Baita Sahara.

REFERENCES

- Bell, R. C. S., (1945), *Orissa District Gazetteers*. Superintendent, Orissa Government Press, Cuttack.
- Cunningham, A., (1884), *Report of a Tour in the Central Provinces and Lower Gangetic Doab*. Archaeological Survey of India, vol. XVII, Calcutta.
- Government of India, (1911), *Census of India, Bengal*. Vol. V. pt. II, Calcutta, 1913.
- Government of India, (1931), *Census of India*, Vol. XV. Central Agency pt. I, report. 1933.
- Government of India. (1961), *Census of India*, Vol. I pt V-B-IV, Ethnographic Study, No. 12.
- Dalton. E.T. (1872), *Descriptive Ethnology of Bengal*. Today and Tomorrow's Printers and Publishers, New Delhi. 1974.
- Grierson, G. A., (1906), *The Linguistic Survey of India*, Vol. 4 : 217, Calcutta.
- Mazumdar, R. C., (1963), *The History of Bengal*, Vol. I (*Hindu Period*) : 35-36, University of Dacca, Ramna, Dacca.
- Middleton, J and Tait, D., (1958), *Tribes without Rulers : Studies in African Segmentary Systems*. Routledge and Kegan Paul, London.
- Naroll, R. and Cohen, R., (1973), *A Handbook of Method in Cultural Anthropology*. Columbia University Press, New York.
- Patnaik, U., (1955), *Saoras of Ganjam Scheduled Areas*. Orissa Tribal Research Journal, Vol. I.
- Risley, H. H., (1891). *The Tribes and Castes of Bengal*, Vol. II, Bengal Secretariat Press, Calcutta.
- Senapati, N and Tripathy, P., (1972), *Orissa District Gazetteers, Dhenkanal*, Orissa Government Press, Cuttack.
- Thurston, E., (1909), *Savara, Castes and Tribes of Southern India*, Census publications, Delhi, 1975.

FIG : I



TABOO ON FISHING AND FISH CONSUMPTION IN BENGAL : A STUDY FROM ANTHROPOLOGICAL AND ZOOLOGICAL STAND POINT.

SABITA RANJAN SARKAR

Introduction

EMINENT scholars like Durkheim, Frazer, Freud, Malinowski, Mead, Radcliffe Brown and others dealt with the theoretical concept of the term 'Taboo' in their scholarly publications. Instead of elaborating its theoretical concept any more, the taboo has been dealt with in this paper strictly from the functional point of view. The idea is to show as to how the inter-disciplinary approach may be successfully made for the study of taboo to bring into sharp focus its relative importance in the cultural life in general and the scope of its practical application from scientific angle in particular. As a case study, the taboo prevalent among the Bengalees, in association with fish consumption has been taken up for the purpose. To deal with this issue from the functional point of view, the question may be cropped up as to why the Bengalees are observing food taboo in fish consumption. So at the outset, the relative importance of fishing and fish consumption in Bengali culture has been taken into account in this paper for giving explanation in this regard.

Importance of fish and fishing in Bengali culture

Cultural history of the Bengalees, inhabitants of Bengal, one of the provinces of British India cannot be understood without reference to its both the halves, namely, West Bengal, at present merged with India and East Bengal, now Bangladesh, a sovereign independent country. For the convenience of referring to both these politically divided territories together, for the sake of cultural history of the Bengalees, Bengal, the old name of the State as it stood in the prepartition days, has been used in this paper.

- a) Bengal is riverine in the real sense of the term. Its principal rivers are all perennial. They are allogene type. With a number of principal perennial rivers together with their large number of tributaries distributed almost all over the State followed by coastal sea, estuaries, innumerable canals, large water-logged areas (bse l) etc., Bengal is extremely rich in fish fauna. This abundance of aquatic fauna has made tremendous impact on the cultural life of the Bengali population.
- b) Fish is being counted as the principal protien diet and a palatable item of food among the Bengalees from time immemorial.
- c) Before aryanization the Predraavidians, earliest inhabitants of Bengal were predominantly the hunters and fishers who exploited the natural resources for food. It seems possible that later immigrants, the brachycephalic Alpines might have adopted fish for consumption under the influence of the autochthons.

- d) Love for fish among the Bengalees did not loose ground even after the Aryan influence had spread over Bengal. Local ecological condition, subsistence pattern and profound love of the people for fish through the ages did not encourage the authors of the religious scriptures (Smriti-shastrakars) of the early historical period to make stern steps against consumption of fish in case of the Bengalees. Of course the eminent Smriti-shastrakars like Balak, Bhavaddev Bhatta Srinath Acharyya and others introduced certain stringent measures but with some reservations. However, such initial rigidity was further curtailed due to historical processes. The Hindu brahmanical religion of Bengal in the later part of the mediaeval period faced the challenge from other religious faiths like Tantra Shastras, Tantric Buddhism, Islam, Vaishnavism etc. To give safeguard to the Hindu brahmanical religion, Raghunandan, an eminent author of religious scriptures of the 16th century advocated liberal sermons abolishing the rigidity of earlier brahmanical religious instructions to a great extent. In his sermons he allowed the Hindus, irrespective of any caste and creed, to consume fish liberally. With no religion bar the fish has therefore made tremendous impact on the cultural life of its consumers.
- e) Fish as diet and fishing as subsistence activity are believed to be one of the earliest practices of the inhabitants of the region. Even to-day fish as food enjoys equal importance in day to day life and feasts on festive occasions both in urban belt and rural areas. Bengali Hindu married women consume it liberally as the symbol of good luck while the widows are strictly debarred from it. As the symbol of fertility and good luck the fish tops the list in marriage presentation made immediately before and after the ceremony from both the sides. In certain cases it is counted as the sacred object and is, therefore, used in ritual practices. In folk art it has made significant penetration. Both in folklore and literature fish is a popular topic.
- f) The Bengalees are noted for their cultural heritage. They exhibit speciality of their own in almost all the salient cultural features. Large scale fish consumption is one of the specialities of their dietary habit. Of approximately eleven crores of the Bengali population (both in West Bengal and Bangladesh) except the upper caste Hindu widows and a section of the Vaishnavas, the rest of the population irrespective of caste, creed and community consume fish with great relish. Rice and fish are their staple food. Fish is, therefore, counted as one of their essential commodities.
- g) To meet the regular demand of fish for the millions of people through the centuries, a section of population under the Hindu caste system took up fishing as a hereditary occupation. Among the Hindu fishing communities Malo, Jelias, Kaibarta and Tiwar are by far the most dominant in numerical strength. Fishing is the full time job of the Bengali fishermen. The members of the fishing communities are distributed throughout the state. They live almost exclusively in the rural belt where there are rich fishing grounds mainly in inland water ways.

When fish is so closely related to the cultural life of the Bengalees, there is every possibility of having taboo connected with fish consumption.

Background of imposition of Taboo

Different varieties of fish are available in the waterways of Bengal. Not all of them get equal importance to the Bengali fish consumers. The Hindu conception of ritual purity and impurity has something to do with selection of fish for consumption. Under ordinary circumstances availability, habitats, feeding habit, spinny feature, size, shape, physical appearance, fleshy body, taste, delicacy, post-cooking smell,

hygienic value, catching technique, commercial importance etc., are very much counted in making a food fish dearer to its consumers. Therefore taboo is not associated with the fish in general. It is traced only with those fishes which have significant importance in the cultural life.

Some of the fishes like Rahu (*Lebeo rohita* Ham.), Hilsa (*Hilsa ilisha* Ham.), Tapse (*Polydactylus paradiseus* L.), Magur (*Clarias batrachus* L.), Morula (*Amblypharyngodon mola* Ham.) and a few others are dearer to the common people. Of all these fishes, Hilsa (local name : Ilish) is by far the most popular and is regarded as the king among the fishes. Legendarily and traditionally it is liked by the all sections of people. Its English name is River Shad or Indian Shad and scientific name is *Hilsa ilisha* (Hamilton). Among the fishes consumed by the Bengalees, definite taboo is observed by the Hindus in the consumption of Hilsa particularly in folk cultural environment and it is as follows :

“Hilsa should not be consumed immediately after Vijaya Dasmi Day, the day of immersion ceremony of Goddess Durga and its consumption may be started again on and from Sree Panchami Day, the day of worship of Goddess Saraswati.”

Consequently synoroning with the taboo as observed by the consumers-fishermen, the suppliers also practice pseudotaboo in catching the fish. They refrain from catching Hilsa in inland waterways so long the consumers observe this food taboo.

Methodology of study

Taboo is formulated and introduced by men out of their accumulated experience. They observe it with certain definite end in view. The motiff may be directly or indirectly connected with factors like maintaining ecological balance, controlling social environment, regulating political and economic affairs. It is also connected with religious aspects. Avoidance of health hazard, protection from danger, survival of beneficial species of plants and animals from extinction etc., are associated as well with the utilitarian role of taboo.

The taboo is a human affair and is connected with the cultural life of the people. Anthropology is, therefore, by far the most important discipline for making its study in the cultural context. But the anthropologists have certain limitations in making the study of taboo in depth. The anthropological study can bring out an overall picture by making holistic study. However to assess the functional role of taboo in depth in political affairs, subsistence pattern, ecological balance, protection of endangered species etc., study may be made by the scholars of specific discipline like political science, economy, natural sciences respectively. Holistic anthropologica study followed by the study of specific subject are the best way of assessing the functional role of taboo in a social setting. Therefore study on taboo can best be made by making interdisciplinary approach. From this conceptual point of view, anthropological study has been made on the fish consumption taboo for this paper. Then zoological information on the life cycle of the fish has been taken into account. The idea is to show how far the taboo postulated by the rural folk out of their accumulated experience is ideal for protecting Hilsa in the background of the local physical environment and the life cycle of the fish and at the sametime satisfying the local need to the maximum extent without creating any hindrance in exploitation and maintaining the fishing economy of the fishermen steadily. How far the application of the accumulated experience of the rural folk through taboo is scientific, can best be judged by analysing it in the context of the life cycle of the fish furnished by the competent zoologists.

Factors responsible for taboo connected with Hilsa

Various factors are responsible for making Hilsa by far the most popular fish among the Bengalees. In taste it is unparalleled. The fish possesses sufficient oily substance in the body which is peculiar of its kind. It emits such a postcooking smell which generates temptation among the consumers of all age groups. Innumerable varieties of preparation from the simplest form to the sophisticated moglai and western dishes can be prepared out of it. Not to speak of the fish itself, even its smell alone is often used to convert an ordinary menu into a palatable one. Salt which is used for preparation of salty fish to preserve it for many days, is sometimes mixed with an ordinary vegetable curry to serve this specific end.

Hindu conception of ritual purity and impurity has something to do in determining the status of Hilsa. Sea is regarded as holy place in Hindu mythology. It is a sea fish and is generally caught in big rivers from considerable depth. Hence it assumes higher status so far as its habitat is concerned when compared with the fish of shallow, muddy and stagnant water. Its shapely body and silvery white colour are a treat to eye. Very appearance of this fish, therefore, generates temptation among the consumers. With body covered with attractive silvery white roundish scales of ideal size without any slippery coating, it enjoys better position according to the Hindu concept of purity when compared with the degraded scaleless fishes with a slippery coating on their body. Scales of Hilsa are so attractive in shape, size and colour that they were used by the female folk in the execution of folk art in the recent past. Catching technique of Hilsa has peculiarity of its own. It is exclusively caught by a special type of net (local name : Shangla jal) without damaging the body in any way. The consumers, therefore, do not feel any kind of abhorrence in the consumption of this aquatic species. Its spawning capacity is prolific. Hence it is considered as the symbol of fertility.

From time immemorial Hilsa is so popular among the Bengalees that a myth connected with it, is prevalent among the fishermen. Accounting the reason for its unique taste, the mythical story narrates that the gods once churned the sea in search of heavenly nectar. When it came out, they had consumed it till the residual part was left behind. This residue was thrown into the sea and it was consumed by Hilsa, thereby, making it more tasteful than any other fish. So dear this fish is to its consumers that in certain folk rituals (local name : Brata) it is offered to the folk deities for appeasing them through diet in expectation of the well being of the family members. It is the most favourite fish menu both in day to day life and in the feasts on festive occasions and social ceremonies. Popularity of Hilsa for its physical properties does not remain confined to cultural life only as enumerated above. It plays distinctive role in regulating the economic life of the fishermen and the fish traders.

Hilsa is a seasonal fish. They are predominantly found in the rainy season, particularly in big rivers which have direct access to the sea. They exhibit a distinct ecological peculiarity. The Hilsa always travel against strong current in shoal far below the water surface. Their movement again depends upon the weather condition. They come to the surface in a playful mood when the sky is overcast and strong wind blows. Taking advantage of the situation, the fishermen catch Hilsa in turbulent rivers under adverse weather condition often at the risk of their life. For their peculiar habit and habitat, special net is made use of and specialised technique is adopted to have a good catch. Practical experience followed by keen observation power is needed for Hilsa fishing. As such Hilsa catch is counted as specialists' job. It is, therefore, confined to the professional fishermen of the fishing communities locally known as Jelias or Jele.

During the rainy season major portion of rural Bengal (particularly in Bangladesh) goes under water. Due to inundation all the inland waterways like canals, beels etc., which serve as favourite fishing grounds in the winter and the summer months go under deep water. With strong current such huge volume of water accumulates in these waterways that it becomes very difficult to catch different varieties of fish which are available there in other seasons. So the fishermen move in search of new fishing grounds. The ideal fishing ground in rainy season in Bengal, particularly in Bangladesh is the big rivers where Hilsa move in large shoals. Fishermen from different parts of the State migrated to these regions in organised batches and Hilsa fishing becomes the main fishing of the season and it extends from July to October.

From the economic point of view also, Hilsa fishing is extremely profitable. The Hilsa always move in shoal and therefore very good catches are possible. At the same time, being an palatable fish to the Bengalees, its market rate is high and the demand is persistent, as other categories of fish are not available in plenty during the rainy season.

Calcutta, the capital of the State of West Bengal and the largest city of the Indian sub-continent, is inhabited by several million Bengalees. Fish, one of the staple food stuff of this vast population is supplied from the rural belt. Therefore, the echo of the rural belt is reflected in the city market. There is scarcity of fish in the city markets like the rural belt during the rainy season. Hilsa, the seasonal fish is profitably utilised to meet the urban demand. This fish, therefore, plays a very significant role in the economic life of the poor fishermen. The deficit financing of the lean period in the economic life of the fishermen can easily be overcome and excess amount may also be saved provided the fishermen are successful in making good Hilsa catch during the rainy season. In case of failure, deficit financing for the year is inevitable. There is no other alternative for majority of them but to approach the money lenders for food and clothing. The fishermen give so much importance to Hilsa catch for their subsistence economy that they start the preparation for the organised Hilsa operation one or two months before the actual Hilsa season begins. Definite economic organisations are formed for catching the fish and marketing them in urban centres.

Not only the members of the fishermen communities, but also the people from other communities also make good earning from the Hilsa trade. The commercial transaction does not take place directly between the fishermen of the rural belt and the fishsellers of the city. An intermediate group belonging to different castes and communities play the role of middle man in bringing them from rural areas to the urban centres. Thus it is apparent that the fishing trade and fishermen's economy during the rainy season mostly revolve round the Hilsa in Bengal.

Considering the importance the Hilsa enjoys in the cultural life in general as an item of food and in economic life in particular, social thinkers thought over the issue of maintaining the steady flow of the fish every year in the inland waterways during the rainy season. The idea is to make them available in sufficient quantity for meeting the local need and also for maintaining the traditional fishing economy in order. This might probably be the reason for introducing taboo in favour of Hilsa. It is undoubtedly the food taboo. It stipulates the last date of consumption of Hilsa in the month of Aswin (September-October) on the Vijaya Dasami Day, the emersion day of Goddess Durga and marks the day for starting the consumption again on Sree Panchami Day, the day of worshipping Goddess Saraswati in the month of Magh (January-February). The ban period roughly continues for three months.

Life Cycle of Hilsa

Hilsa is a sea fish. But it spawns in sweet water. This fish attains the stage of developing spawn within its body towards the end of the month of Asar (June-July), the beginning of raining season in Bengal. Hilsa, therefore, move about in the coastal water in desperate search of sweet water. The big rivers which have direct access to the sea, drain huge volume of water with the onset of monsoon. Very strong current are thereby developed. The strong current leads the huge volume of sweet water far deep in the coastal sea. As soon as the Hilsa come in contact with such water, they change their course and move in shoal towards its source swimming against the current. This ideal condition perpetuates only during the rainy season. Hilsa, is therefore available in the inland waterways at this time, and that too only in the big rivers like Padma, Gangaa and their important tributaries. The fish move in shoal offering large scale catch in convenient places. Taking advantage of this part of the life cycle of the fish, the professional fishermen from different parts of the State assemble in the big rivers and take up Hilsa fishing as their major economic activity in the monsoon months.

Life cycle relates to the habitat. Hilsa moves very fast in deep water, often touching the sandy river bed. They are very sensitive and change their course with slight disturbance. As such special type of net is used in catching the fish. Ideal manipulation technique typical of its kind is also employed to cope up with its habitat and nature. Organised fishing is, therefore, necessary for effectively dealing with this fast moving aquatic creature. Economic organization has been formed to deal effectively with organised fishing.

Taste of Hilsa depends upon its nature of food and the mineral content of water through which it moves. A Hilsa when in sea is not so tasteful. As soon as they enter in sweet water, they are to depend on food like sweet water algae, minute crustacea and even on sand and soil of the river bed. It is believed that a change in the nature of food has something to do with the taste of the fish. Besides Hilsa enter the river in matured stage. Spawn starts developing within the body of the fish immediately after it reaches the ideal sweet water sources. It is at this stage maximum quantity of oil is accumulated in the body. This oil content is largely responsible for the taste and postcooking smell of the fish. Hilsa, therefore, attains by far the most tasteful stage during the rainy season in the inland waterways.

The Hilsa are to work very hard in moving against strong current in deep water in matured stage. It is probably one of the reasons for its attaining desirable shape and size while in sweet water. Its silver white colour glitters most at this time. Therefore, the life cycle of Hilsa reflects that the fish in size, shape, taste and appearance reaches its peak while in sweet water for spawning during rainy season. The Bengalees have rightly picked it up as their most favourite seasonal food. In this connection it may be mentioned that the size, shape and taste of the fish varies to some extent from one river to another. It demonstrates that mineral contents in water, current strength and nature of food articles available in its habitat are partly responsible for the variation. Therefore, the Bengalees of eastern part and western part have been quarrelling with each other from time immemorial over the superiority of Hilsa of Ganges to that of Hilsa of Padma in taste.

The flow of Hilsa from sea to inland waterways are regular during the rainy season. But immediately after this season rainfall gradually decreases. The flow of water in the rivers diminishes proportionately. By October this flow becomes so poor that Hilsa does not get the scope of entering the river from sea any more. Therefore, the Hilsa season remains strictly confined to three months extending from Ashar to Bhadra. Scope of catching Hilsa becomes very much restricted during the month of Aswin, the succeeding month.

The life cycle of the fish indicates that the formation of spawn among the Hilsa starts towards the end of Shraban (July-August). It becomes developed by the end of Bhadra (August-September) and gets ready for spawning in the month of Aswin (September-October). Imposition of taboo prohibiting the consumption of fish on this occasion protects the fully matured fish for spawning. The spawning capacity of Hilsa is terrific. Although the majority of fish is caught by the fishermen during the earlier months, whatever the fishes are left behind, if they are protected for effective spawning in the last phase, the supply of fish in the next season is assured. It is thus apparent that the imposition of taboo on consumption of Hilsa has been made at the right time as per the life cycle of the fish.

It also shows that the innovators of folk tradition are very keen observer of nature. They might have critically observed the life cycle of Hilsa and the local ecological condition. They have imposed the taboo at a calculated time when it does not stand in the way of the full exploitation of the fish and at the same time offers the scope of its proliferation.

The innovators of folk tradition were very much practical in stipulating Vijaya Dasami, an auspicious day for stopping the consumption of Hilsa and Sree Panchami, another auspicious day to start afresh with its consumption. The Hindu rural population is very much religious minded. Therefore religious interpretations have been given to safeguard this food taboo. Immersion of Goddess Durga takes place on Vijaya Dasami Day. The Bengali house wives, particularly the Brahmins offer pieces of fried Hilsa with stale rice to the Goddess on this very day as per folk tradition. To give due importance to this practice, it has become the convention that after this kind of offering to the deity, no Hindu can consume Hilsa till Sree Panchami Day. The rural folk believe that violation of this taboo may bring misfortune to the family of the offender.

It is also assumed by the rural folk that after the immersion of image in the rivers, Hilsa gets the chance to taste the oily coating which is applied on the body of the image for bringing glittering effect on colour. Such a fish is strictly avoided from the ritualistic point of view. Under the deep water it is not possible to identify the fish which have tasted the oily coating of the image and which have not. To avoid this situation the Hindus in general give up Hilsa altogether after the immersion ceremony.

The elderly people compare this fish with matured spawn, to a pregnant woman. A pregnant woman in Hindu society receives sympathy and due regard from different angles for the safety of the baby in the womb. Special care is taken not to disturb her unnecessarily. Murder of a pregnant woman is considered as a great sin. Similarly, comparing a fish with matured spawn, to a pregnant woman, the Bengali Hindus have given up the idea of consuming Hilsa towards the later part of Aswin (September-October) when its spawn attains full maturity. Selecting the auspicious days both for stopping and starting of Hilsa consumption, it is observed that the innovators have successfully utilised the religious sentiment of the people in restricting so rigidly such a popular diet.

The innovators have also given due consideration in the selection of date for the imposition of food taboo so that the economy of fishing community may not be disturbed. With the diminution of the spree of rain in the month of Aswin (September-October) the flood water gradually passes away. The water level drops appreciably. It becomes easy to catch the different varieties of fish which have spread all over the flooded region. Thus towards the end of Aswin, the fishermen enjoy the opportunity of exploiting the different fishing grounds to their advantage. They are not to go to far off places in the big rivers for fishing. With the change of situation they do not depend on Hilsa any more for subsistence. Thus the innovators have given due consideration to the local ecological condition in the selection of timing for the imposition of restriction on Hilsa as diet.

Not to speak of the fishermen, even the consumers are not affected by the imposition of this food taboo at the stipulated time. The spawns are matured during the month of Aswin. As the spawns develop towards maturity, the oil content in the body of the fish also gradually diminishes affecting its taste proportionately. When the spawns become fully matured in the month of Aswin, the fish becomes really tasteless. At the sametime the Bengalees consume this fish throughout the rainy season. Due to excessive consumption they become fed up with Hilsa towards the end of the season. They are, therefore, very badly in need of other kinds of fish. In the meantime flood water starts passing away in the month of Aswin and the fishermen begin fishing in different fishing grounds like canal, beel etc., which were so long inundated. Under the circumstances the Bengalees most willingly and ungrudgingly switch over to the new varieties of fish without caring for Hilsa any more.

Thus summing up the discussion it may be mentioned that the utilitarian value of this fish taboo is four fold and they are as follows :

- (a) Taboo has created a condition for safe spawning of the fish making it possible for their proliferation inspite of large scale consumption.
- (b) It has made an ideal ecological balance for the survival of this beneficial species.
- (c) It has given the consumers adequate opportunity to consume the fish to the extent until they themselves are fed up with this type of food.
- (d) It does not disturb the economy of the fishermen in any way during the rainy season. It comes into effect only when they find out alternative fishing ground to their advantage.

Thus it is through this taboo a wonderful balance is maintained with ecological condition, economy of the fishing community, cultural life of the consumers and proliferation of the species.

MASKS AND PERFORMING ARTS : INDIA AND JAPAN

MASATOSHI A. KONISHI

As the means of transformation

IT has been well known that masks have been used since the time immemorial by man in performing arts, especially in their connection with rituals; as masks have been the most convenient and appropriate means to transform the performer into a godly or super-natural; super-human being. Heavy make-up could also serve for the same purpose; and in this case, one could be well prepared during the long time taken for the make-up to gradually transform himself into such a godly being, especially as in the cases of *kathākali* and *yakshagāna* in South India, and of *kabuki* in Japan, too. This process can be taken as a part of ritual of a sort. Although *kabuki* in Japan has been much secularized now and has become a dance-drama form losing much of its ritual characteristics, still the long and tedious time spent for the make-up can well give him enough chance and preparedness to transform himself into the character of the other sphere, so different in time and space from his own.

Masks, however, give chance to the performer to transform himself so instantly. As soon as he wears the mask, he is no more there, but something else suddenly appears in front of the others, and even he himself may be quite unaware about this, unless he looks into the mirror and sees him through it. However, he does not actually require such an artificial equipment, as he should be by then well prepared for the most proper and right type of the transformation. In fact, particularly in connection with these, we observe that the performers of Shinto ritual-dance of *kagura* wearing godly masks are all involved in a series of purification and other rituals preceding the performance for a certain period, sometimes seven or even thirty days, and at least one day before, without fail. It is also noteworthy that he spends much time in putting dresses and other attires before attaching the mask on his face at the last moment. This is really the most dramatic moment of the transformation, always observed at the back-stage of the *kagura* performance in rural areas of Japan.

Masks of rituals

Masks are generally kept deep inside the Shinto shrines, and sometimes even regarded as to represent the deities themselves enshrined therein. Masks, therefore, are brought out with due rituals, and treated as gods themselves before being put on the performers' faces. The performer becomes anonymous at once then, and he is no more a villager whom the spectators used to know. It is not rare that he gets in a state of trance during the performance, and people think that the god has possessed him. It is a matter yet to be seen anthropologically whether the possession takes place in such a case on the *mask* or within *himself* wearing the mask or descending from the heaven, or by the spirit already residing in the mask.

In these particular aspects, careful comparative studies are seriously needed with the cases in some of the masked dance-rituals like *gambhīrā* of Maldah, *gāmirā* of West Dinajpur, *chārkhilāini* of Jalpaiguri (all in West Bengal), *bhāonā* of Assam, etc. It is further to be noted that not only in the characteristics of these, but also in their actual forms and designs, too, there are striking similarities

between Japanese *kagura* masks and many of the *gambhīrā* and *gāmirā* masks, especially those representing *rakshāsīs* and animal masks of bear, tiger, rhinocero etc. While they look like the masks representing rather minor deities in the Shinto *kagura*, those of higher deities may also show some similarities with the serene and dignified masks of Siva and Parvati used in *gambhīrā*. Some of the old and deified masks, not in use now but kept deep in the Shinto shrines, are in accordance with the styles seen in some masks still made and used by *ādivāsīs* like Baiga in Maldah and Gond of Baster, too, sharing the similar forms, concepts and sentiments.

It may be also mentioned here that Shintoism is essentially a natural-born religion going back to the prehistoric times, without any definite founder or cannon but with its "eight million" gods based on natural and socio-cultural phenomena. In these aspects, too one may find certain similarities with Shintoism and Hinduism in popular dimension, and this may also explain the similarities with the masks or the masked performing arts between the two countries.

Possible Indian influences

However, the sheer likeness between the more secular type of masks used in other types of performing arts in Japan and some of the masks in India is striking. *Gigaku* is one of the oldest type of performing arts ever recorded in texts, as well as with the actual extant masks preserved since seventh century A.D. to the present day in Hōryūji Temple in Nara (now most of the masks are housed in the National Museum, Tokyo). *Gigaku* is not played anymore but said to have been consisted of various scenes, not necessarily religious but with rather comical and even obscene characters such as *ko-jin* or the "Central Asians" with his phallic nose, or drunkards (*suiko-juu*) chasing after a lady. This was the time when the Central Asian influences reached Japan through the "silksroads" and T'ang China, so, much Indian influence could have been also felt, though indirectly. Besides the masks said to represent Indian Brahmins in noble elongated face with a prominent nose, there are masks called *karura* or *Garuḍa* with its unmistakable protruding beaks, which can be well compared with the examples adopted by *bhāonā* in Assam and *Jhargram chhau* of Medinipur, West Bengal.

Though *gigaku* is almost completely forgotten now, some characteristics of it has been incorporated and inherited by *bugaku* or the imperial court music-and-dance traditions, which is still strictly preserved and played now exclusively by the hereditary Imperial Household artists since ninth century onward. In many of its items characteristic masks are used, and some of them representing dragons or super-natural beings again look like *Garuḍa* or other animal-deity types of the East Indian masks. Especially, I was amazed to see the *Chārkhilāini* masks of Jalpaiguri of North Bengal, particularly the board-flat female mask of Chorgok character made of bamboo matting, as it resembled so much with the mask called *ama* used in *bugaku*. Both could have had the remote Tibetan influence.

Still another striking example is the Asura mask of *omnanālya* from Koraput, Orissa. The humorous expression with protruding round eye with downward eyebrows reminds me of a certain type of *kyōgen* masks which is performed in between more serious items of *noh* play, both came to be prominent after 12-13th centuries in Japan and still played to the present day. Even before that, we have had another tradition of Buddhistic masked performance called "the Procession of 25 Bodhisattvas" in some Buddhistic temples, but they are of the marked Sino-Japanese style.

Mask and motion

Nothing is complete without mentioning the famed *noh* masks and those of *chhau*, especially of Seraikella, now in Bihar. Not only the serene and artistic expressions without exaggeration, and that the expression changes even according to the slow and slightest change of its position, form the quality of the intensive and poetic movement to the highly tense music in both cases. A critic once called *noh* the "poetry or philosophy in motion", but the same can be applied to the court type of *chhau* in Seraikella.

The difference between that of Seraikella and that of Purulia in West Bengal, famed by its most vigorous and thrilling movements to the lively and exciting music, may be due to the difference of the patronage and performers themselves. As is well known, the Seraikella *chhau* has been under the patronage of local *rājas* or the Sing Deos, and the choreographers as well as many of the performers are from the *rāja's* family. Likewise, *noh* patrons and the performers were the ruling *shōguns* and warriors, who were so cultured and sophisticated enough in front of the utter uncertainty of death or life in their everyday life.

On the other hand, the Purulia *chhau* is essentially of the indigenous and autonomous peasants' art, naturally and deeply rooted in the "tribal" culture, thus to attract more popularity among the more ordinary class of people in mass. Although masks are rarely used, *kabuki* which often shows the similar vigorousness and virility was also born out of the soil among the rather discriminated class of society, and has attracted mass of people since 17th century to this day. Their patrons were the rich but oppressed class of merchants under the feudal system at the time. While their vigorous make-up shows some similarity with expressive masks of the Purulia *chhau*, it is more akin to that of *kathākali* and *yakshagāna*, particularly in that both of them do not use masks.

In these cases, facial expressions (*mukha-abhinaya*), *mudrā* (symbolic gestures shown by fingers) and vigorous body movements consisting of various limb actions play so essential roles, and especially, this *mukha-abhinaya* used to be thought to have consisted so important elements to cause the *rasa* and *bhāva*, as fully described in classical texts like *Nāṭyashāstra*, *Abhinaya-darpana*, and others. Besides the obviously important role played by masks for the transformation in rituals, covering the performer's face in more artistic forms in dance might have been a big hindrance for the cause of *rasa*, etc., therefore, there seems to have been no or little mention of the masks or the masked performances in these *śāstras*.

There certainly appears a word *mukhoś*, and while the word means no doubt "mask" at present in some of the modern languages, there still seems to remain a little doubt in its original sense, which could have actually meant a sort of "covering", about which, however, a further discussion is needed.

At any rate, if the *mukha-abhinaya* is covered like this, other alternatives are two-fold : either to become so vigorous as a compensation not showing the face, thus acquire the *tāndava* form, or to become so sophisticated to acquire the intensified *lāsya* form. This practically explains the difference between the two styles of Purulia and Seraikella *chhau*, and to some extent, difference between *kabuki* and *noh*, though *kabuki* is utterly free from hiding their face from masks, thus in this case, besides its resemblance with *kathākali* and *yakshagāna*, but resembles with still another important *chhau* tradition of Mayurbhanj in Orissa, in which masks are not used and played freely, often in group-dance form to its unique charm. It is also reminded here that the Medinipur or Jhargram *chhau* also rarely uses mask, at least in its present form.

Playing with gods

Unfortunately, India does not retain old extant examples of mask as in Japan, only with some sporadic archaeological materials excavated from here and there. Even in the case of *chhau*, we cannot say definitely which is older, the types using mask, or not using it. Although I have a feeling, without any concrete evidences, that mask was introduced sometime later in some cases, but discarded again in fewer cases later, only retaining some such super-human characters like Garud.a, Jata-yu, Narasim.ha and other animal types, I do not go into the details of discussions here. We can only ascertain again, that masks were, and still are such convenient means for the transformation, and thus, it has been not only used for the rituals but also for the popular entertainments as well.

Entertainment in such a case, however, is not exclusively meant for the people alone. It was, and still has been, essentially for the gods and super-natural beings as well, and by becoming, the performers themselves, a sort of gods and super-natural beings by the transformation enabled through the mask, could play with the gods as one of them, inviting all the other humanfolks, too, to the stage of the play of gods. Therefore, it is not so wise, and practically often difficult, to demarcate between the more ritualistic type and more secular type among the prevailing masked performing arts, both in India and Japan.

Kagura, in fact, literally means "the god-pleasing music", which could have meant both entertaining the gods and people, and playing with the gods and people. Performing arts thus become the meeting place meant for entertaining both human and super-human beings alike, and the performers are playing there such intermediary roles between them. There need to mention anymore, that masks do serve, and have served for the purpose.

MASK OF EASTERN AND NORTH EASTERN INDIA

MANIS KUMAR RAHA

HUMAN being expresses his emotion and reactions in various ways through his speech, his gesture etc. particularly through his facial expressions. His love, his sorrow, his joy, his anger, his affection, his hate and many other of his feelings are often expressed through his face, eyes etc. But sometimes he likes to express all those reactions of somebody else whose role he acts. When he plays the role of someone, he needs to act in disguise. Then sometimes, he covers his face with a mask to depict the face of that somebody. Here lies the importance of mask. A mask as defined in Oxford Dictionary is a covering of any material as disguise or for grotesque appearance to amuse or terrify. To Dr. S. R. Sarkar –

A mask is a three dimensional facial portrait used as a covering for the face either as a protective screen or disguise (1990 : 3).

The mask depicts the facial aspects of different human being, mythological and primitive and also of animals and birds. It simultaneously highlights the various reactions of the human being, animal or bird whose mask has been worn by the actor. Here actor's expression is not visible but of the human or animal whose part is played by the actor. According to Shri Bireswar Bandopadhyay, the mask is the covering or screen of the face and the main objective to wear this is to conceal identity of the actor who wears the mask. It is worn not only to act the role of some one but also to create a peculiar reaction of wonder and horror in the mind of the audience.

The mask has a vivid strong appeal in the art of characterisation, because of its striking colourful aspect which takes great animation when it is worn. It is, therefore, a perfect transmitter of facial expression to large audience. (Bhavnam, 1974 : 44).

Use of mask in drama, dance and various entertainment programmes is universal. It is prevalent in different parts of the world. In ancient Greece and Rome actors and actresses used to wear mask while they acted in different dance or drama. They used to feel that with the use of the mask, dance or the drama would be more attractive to the audience than without wearing it. They used to wear horror evoking or amusing masks while they played their role in the drama, and these definitely were very much attractive to the people who in large number used to attend the drama. The mask is also in use in different parts of Africa, South America, Tibet, Sree Lanka, Bangladesh, India, China, Japan, Burma, Thailand and some other parts of the world.

In India masks in different forms, are in use in North-Eastern States, Eastern India, some parts of the Western Himalayan region and also in South India. In North-East India different tribes are found to wear mask of different forms, sizes, shapes and also for different purposes. During different dances or pantomimes the Sherdukpen, Khampa, Monpa and others wear not only ornet dresses, ornaments etc. but also a large number of masks. Some of these masks, as reported by Elwin are so natural that they appear almost like real faces, while others represent birds and animals and yet others are of what Maraini calls the 'protective horror' typeogres men with twisted mouth, women with goitre – to drive away the spirits of evil. (1959 : 70-71).

During Torgyap festival at Tawang of Arunachal Pradesh a number of dances takes place. During this festival which is meant for 'driving away evil spirits, and ensuring prosperity, good weather and every material and spiritual blessings', the dancers use masks. Some of these masks which represent the denizens of the land of death. The people recognise them later on by seeing the mask worn by the people. During Thutotdam pantomime also the dancers use mask designed as skulls and costumes representing skeleton. These mask dances show

'how the soul after death is received in the other world, (Elwin, 1959 : 71)'.

During Targyap festival the dancers use mask of warriors, clowns, gods and goddesses, birds and animals. The dancers of Chhiogyal Dance wear mask with three eyes to act as King and Queen of Death. During many other dances of the Monpas like Arpos Dance and Yak Dance, and Lion Dance and Peacock Dance and also dances at the time of Loser festival people use appropriate mask. Among the Sherdukpen dancers also use mask to represent the mythological story of the origin of the Sherdukpen. During the dance -

Three masked men representing an ancient hero named Apapek and his sons, dance round the Yak and tell the romantic story of its origin. (Elwin, 1959 : 72).

In Ajilama Dance two figures using the masks of demons with 'flowing hairs', dance with a boy dressed as a Raja and two others dressed as Ranis (*op. cit.*, 72). Masks are also used in the dance of the Cow which chases Apapek and his two sons, only to teach a moral lesson that if any one kills a cow it would wait for him in the other world only to torment his ghost when it arrives there. In the same way in case of Horse Dance - a finely carved horse's head painted with bright colours is used, depicting the theme that if any one troubles a horse while he is alive, the God of Death will send a horse to trouble his ghost after his death. During the dance like Deer Dance the dancers use masks of the head of a great deer with spreading antlers painted in different colours.

In case of all these dances the masks of animals are used only to appeal to all for developing a sympathetic attitude towards the animals.

The Jachunga Chham Bird Dance in which the dancers wear brightly coloured mask resembling a bird's head, highlights a war against evil. The story narrates about two cannibal birds who consider human being as their prey (*ibid* : 74-75). One of the interesting points in Arunachal Pradesh is that women never wear masks and these are always used by the malefolk. During Drubachuk Festival of Siang area of Arunachal Pradesh similar mask dances are performed 'to ensure prosperity, happiness and health.' The Khampti also use various masks during different festivities and dances. One of the masks is of an animal that troubled that Lord Buddha during his meditation. Similarly, another mask of an animal used by them represents one of the demons tempted Lord Buddha. The Memba also use different wooden masks. The Monpa too use brightly coloured wooden mask representing animals and human beings. One of the interesting masks depicts a women suffering from goitre.

During some festivals the Buddhist Lamas wear elaborate wooden painted masks to depict Buddha (mask of lion, the acme of nobility and goodness), Kings (like Kanchanjangha), Queen and sages, spirits of skeletons (from the unseen world) birds and animals . . .

Watching these phantasmagoric spectacles is indeed a tremendous experience – as the dramas unfold the everlasting moral lesson of the victory of Good over Evil forces (Bhavnam, 1974 : 44).

In West Bengal masks are also used by some people living in the districts of Purulia, Bankura, Midnapore, Malda, West Dinajpur, Jalpaiguri and Darjeeling. In Purulia, West Dinajpur, Malda and Darjeeling the practice of wearing masks in different dances and festivities is widely prevalent almost all over these districts (Sarkar, 1990 : 3).

These masks are mainly used in dance –

Rhythmic music and musical instruments of specific types are associated with each category of mask dance. Again each one has its own distinct choreography. It is thus apparent that in mask dance of each district has peculiarity of its own. For their individual salient feature in three basic aspects like dance form, accompanying musical instruments and rhythmic music, masks dance of each district has been specified by specific name for their individual identity (*ibid*).

The practice of mask dance found in West Bengal is *Chho* of Purulia, *Rabankata* in Bankura, *Gambhira* of Malda, *Gamira* of West Dinajpur and *Devil Dance* of Darjeeling. The tribal people in West Bengal who use mask, are the Santal of Purulia, the Rabhas of Jalpaiguri particularly those who are living in forests, and the Bhotia of Darjeeling district. Besides a number of non-tribal people also use masks. During *Chho* Festival of West Bengal, Bihar and Orissa in which mainly mythological story is played, masks are widely in use. The themes of *Chho* dances are based on the stories from the Ramayana, the Mahabharata and the Puranas and some other mythological literatures. The *Chho* dancers play the roles of mythological figures like gods, goddesses, sages, kings, queens, rakshasas, ghosts, animals etc. Various forms and types of masks are therefore prepared.

Use of masks in *Chho* dance is so deep rooted at present that not to speak of any mythological figure, even in the role of a common man or animal, a dancer refuses to appear mask. Mask and *Chho* dance are now inseparable (Sarkar, 1990 : 7).

In Bishnupur area of Bankura district people perform a mask dance called *Rabankata*. Normally six masks are prepared for this dance which depict the feature of Hanuman, Sugreeb, Jambuvan, Bibhishan, Raban and Indrajit. First four masks are functional whereas last two are ceremonial. This dance is performed for three consecutive nights starting from Vijaya Dashami of Durga Puja. These masks are preserved for future use in the temple of Raghunath Jiu. Sarkar is of the opinion that the idea of the *Rabankata* festival seems to have borrowed from the Ramlila of North India (*ibid*). This festival in Bankura district is held annually once. This mask dance was introduced sometimes between 1626 and 1656 by Raghunath Malladev, the then King of Malla dynasty. He assigned the responsibility of dance and maintenance of the masks to a few persons who were allotted landed property for this task. Only four such masks were prepared a few centuries ago and these are still maintained by four families.

In West Dinajpur *Gamira* is the principle dance in which masks are used. These masks which represent Shiknidhal, Chamunda, Mashan Kali, Bura-Buri, Hanuman, Bagh Mashan and also different

animals are mostly made of wood of a particular tree; 'Gamair'. Members of the Polia and Deshi communities use these masks. Another ritual mask dance of lesser significance of *Chandi Nach* in which masks depicting the appearance of Chamunda, Basanti, Duari and Kuari Denab (Demon), Gohili, Utrakan, Chang Kali and Chamor Kali are in use. The *Gamira* is associated with the worship of Lord Shiva, and the religious feelings of the Deshi – Polia communities are reflected through these masks. The dance associated with the *Gamira* festival takes place between last day of Chaitra (April-May) and end of Jaishtha (May-June). It is the collective and organized dance. Once a year or two in order to prepare these masks the order is given to a craftsman. Only this craftsman is entitled to prepare these masks. No other craftsman takes up the job as this, they believe, will incur wrath of the spirit harbouring the masks (Sarkar, 1990 : 12). The *Gamira* masks show the influence of both north and south Bengal in their structural features. Sarkar is of opinion that these masks of West Dinajpur may be treated as the synthesis of three religious concepts like Brahmanical, Tantra and folk of tribal (*ibid*).

The famous mask dance of Malda is *Gambhira* which is also associated with Lord Shiva. It is performed during *Gajan* festival on the last day of *Chaitra* (April-May) and continues up to the end of *Jaishtha* (May-June) (Sarkar, 1990 : 14).

The masks which are commonly used in *Gambhira* are of Raksha Kali, Shyama Kali, Mashan Kali, Chamunda Kali, Narasinghi, Basuli, Shiva-Parbati and many other Gods and Goddesses, spirits and animals. These dances take place before agricultural season starts. Masks are liberally used in these dances to focus the performances of the character and glamour of the festival. These masks are made of wood and clay.

This dance is organized during *Gajan* festival connected with the worship of God Shiva. It starts from the last day of *Chaitra* (April-May) and continues up to the end of *Jaishtha* (May-June) immediately before the onset of monsoon synchronising with the starting of agricultural activities. (Sarkar, 1990 : 14).

In *Gambhira* dances performed with the masks of Kali and Narashinghi, are the most important ones. Besides the masks of Shakti icons, there are a number of masks used in the dance. But these masks are only to make the dance very attractive and glamorous; these do not have any religious significance. If the *Gambhira* masks are examined properly one would see that these masks bear all typical features of the gods and goddesses of the Hindu pantheon. These also show the professional skill of masks craftsman. Therefore, the *Gambhira* masks, as Sarkar puts, are counted as the fine example of folk art in classical style (1990 : 16).

Masks are also used in different areas of Jalpaiguri, Coochbihar and Darjeeling Districts of North Bengal as masks form an important cultural element of this region. In certain socio-ritual functions and festivities masks are in use. But this do not always have any religious significance, some of the masks are used purely for recreational and glamour purpose while others have ritualistic value. These masks are always used by the male dancers. The female are not allowed to touch these as it is thought that the females are

'more susceptible to the harmful influence of the spiritual power which casts its spell in masks dance through masks (Sarkar, 1990 : 17)'.

One of the very popular masks of Jalpaiguri District is *Mokha Khail*. In this dance the actors liberally use the masks to perform their dramatic roles based on historical or mythological story. Sometimes the story based on real life activities of common man, is also staged, and this story reflects their joy and happiness, sorrow and miseries and also their day to day interaction with one another. Their protest against social evils, malpractices, corruption etc. which always degrade the human value of the society, is also highlighted in some of the dramas and dances. In this *Mokha Khail* dance-drama masks of king, queen, minister, servant, animal etc. are prepared and the actors wear these at the time of their performance.

Similarly, the people of this area also remain engrossed with *Ravana Pala* performed during Durga Puja. This drama in which dances, songs and dialogue are simultaneously used, is based on Ramayana story. In this drama masks of different characters of Ramayana such as Ram, Lakshman, Sita, Ravana, Bibhishan etc. are prepared and used.

In the districts of Jalpaiguri and Coochbihar sometime people perform *Dhai Chandi* dance in which the actors dance wearing the masks of Dakshina Kali and Shashan Kali. But now-a-days gradually people are getting distinterested on these rituals and performances.

Among the Rabha particularly those who live in the deep forests of Jalpaiguri district, West Bengal and work as forest labourers, the mask dance is known as *Charkhilaini* dance. The masks they use in this mask dance, are made of bamboo. But sometimes wooden masks are also in use. The dance is performed immediately after the worship of Goddess Kali and is performed in the honour of the deity Charkhilaini, amalevolent deity for the protection of the villagers from the wrath of supernatural spirit. Therefore, the Rabhas show no disregard to the masks for the fear of the deity. These masks of the Rabhas may be treated as the typical example of tribal art of North Bengal so far as the structural features, style and techniques are concerned.

In Darjeeling as also in Sikkim both the Bhotia, the Tibetans and also the Nepalese sometimes use masks in some of their dances. These dances they perform, in the honour of certain deities. Among the important mask dances of the Nepalese the Maha Kali mask dance is famous and it has a religious significance. They also use mask to act in the dance dramas like *Mahishasur Badh*, *Deb-Danab Yudhya* etc. for recreational purpose. The Bhutia also use mask and special dress to perform the role of both gods and devils under the accompaniment of musical instruments. The Tibetan masks are very famous. Particularly the Devil dance has earned international fame. During certain religious festivities, the Lamas assemble in front of the *Gumpha* (monastery) and perform this mask dance.

Here the dancers play the role of gods and goddesses, deities and spirits. During these dances the dancers wear beautiful dresses with dazzling colour. At the time of preparation of the masks the craftsmen see that the masks become very colourful and eye-catching. Besides human figures, masks of different animals like lion, yak, birds etc. are also made. All these masks are made of wood, paper pulp etc. and preserved in monastery.

Thus it is found that many people of Eastern and North-eastern India both tribal and non-tribal, use mask during dances at the time of some festivities and the dance dramas in connection with different festivals. These masks dance depict different mythological stories and are both ritualistic and recreational in nature. Therefore, masks play quite an important role in the cultural life of some people.

REFERENCES

- Bondopadhyay, Bireswar. 1972, *Bangladesher Sang Prasange*, Calcutta, Asiatic Society.
- Bhavnam, Enakshi. 1974, *Folk and Tribal Designs of India*, Bombay, Taraporevala & Co. Pvt. Ltd.
- Elwin, Verrier. 1959, *The Art of the North-East Frontier of India*, Published by North-East Frontier Agency.
- Sarkar, Sabita Ranjan. 1990, *Masks of West Bengal*, Calcutta, Indian Museum.

BENGAL PAT AND PATUAS : INDIGENOUS COLOUR PREPARATION, STYLE AND TECHNIQUE

ATUL CHANDRA BHOWMICK

PATUA (Pat, painting, *ua*, one, who works, with picture), an artist community of West Bengal, is known for their caste profession of painting abilities on *Pat*. The *patuas* are, as it is said, an out-caste untouchable *hindu* community. The popular stories on their untouchability go like that :-

1. Once a *patua* was painting a figure of Lord *Mahadeva*, though under taboo. The painter saw suddenly *Mahadeva* is coming, he hides his using brush into his mouth. For poluting this way the brush *Mahadeva* cursed them and degraded to lead a life of *javana* (a *muslim*) with *hindu* profession, though they (according to the *Brahmavaivarta purana*) are the off spring of celestial architect *Visvakarma* and *apsara Gritachi*. The *purana* further says clearly that the *chitrakaras* were expelled in the 13th century from society by the angry *Brahmina* for drawing paintings untraditionally (Roy : 1953 : 308).

2. Once a *patua* was delineating the eye-brows of Goddess *Durga* with a colour brush, while the other finer brush was holding between the lips. The eye balls (iris) were later finished with the same brush already poluted with mouth salive earlier. Observing this *Durga* cursed him for using the impure brush.

3. Once a *patua* painted a copulation scene of *Mahadeva* and *Parbati*, on noticing this *Mahadeva* cursed the painter to be degraded to *javana*.

The degradation of *chitrakaras* is stated in the stories of real or fictitious nature and it can be found in reality in the present state of their social position. To escape from this miserable plight they embraced *Islam* yet they are not totally accepted by the *mahommedans*. Their social customs are a mixture of *hindu* and *muslim* practices. At present they perform prayer in mosque, circumcision, burial, marriage and eat beef as solemnized by rites of *Islam*. But a section also follows *gaye halud* (smearing body with turmaric), premarital feast, *satpak* (seven rounds), *hasta-bandhan* (hand tying), use of *napit* (barber), *navanna* (festival of eating new rice), *vaiphonta* (marking the forehead of brother by sister) and wear conch-shell bangles and vermilion as *hindus* to indicate their marital status. They worship mythical artificier *Visvakarma* and Goddess *Kali*, *Lakshmi*, and *Sashti*. But Lord *Yama* is their tutelary deity. Each male member has two names-one *hindu* and one *muslim* appellation (e.g., Gurupada/Jumman Chitrakar, Dukhushyam/Osman Chitrakar), but the *hindu* name being popular. They live with painting *hindu* mythological themes. From the standpoints of religion, social customs and practices followed they are more a *muslim*, though they claimed that their position is intermediate between these two religious groups. A significant tendency now is offing in the *patua* society from religiopolitical pressure. Many of one section are claiming that they are *muslim* from the standpoint of religious practices they followed, while a minor section is following *hindu* rites and religion. Some of this section have even initiated themselves by the *hindu* spiritual preceptar (*guru*). Actually their religion is not ascertain/perfectly.

Patuas, though mostly confined to the districts of Midnapur, Birbhum and Murshidabad, are also found in 24 Parganas, Howrah, Hooghly, Burdwan, Bankura and Purulia districts of West Bengal. Like

Bengal *pat* and *patuas* are also found in Gujarat, Maharashtra, Andhra Pradesh, Tamil Nadu, Bihar and Orissa. *Patuas*¹, other synonyms *patidar*, *patakar*, *pattikar*, *poto*, *chitrakar*, under study², prepare their necessary colours in traditional method from naturally occurring vegetal and non-vegetal earth sources, which they collect by themselves. Very few substances, like/stem, root, fruit and earth produce/indigenous natural dyes of sober tone, pithy description of basic ingredients and colour preparation follows:-

Preparation of colours

Shades of red

1. Orange red — Extracted sap of *pui-mitali/metuli/populi*, locally called as *bansunti*, the ripen fruits *pui* pot-herb (*Basella rubra* Linn.) produces the colour. *Pui* is grown freely in kitchen gardens. The colour, thus produced, has a fugitive nature. So, to darken the colour, a little shell-lime is mixed to it.
2. Rosy red — A little of limestone chalk when mixed with *hingur/girimati* (red oxide). Extract of rose-petals is also used for the preparation of this colour.
3. Brown orange — Extracts of *pan* (Betelvine - *piper belle* Linn.), lime and a little catechu of *khadir* plant (*Acacia catechu* Willd.) produce brown orange colour.
4. Orange yellow — Prepared in two ways :-
 - (a) Extract of orange – peel mixed with lime.
 - (b) Extracts of betel, lime and a very little catechu when mixed.
5. Light red — Extracted juice of *pan* is mixed with powdered catechu.
6. Red — Formed from thick juice extracted from rinds of *keo* fruit (*Garcinia cowa* Roxb.), grown wild.
7. Deep red — *Hingur* earth piece is rubbed on whetstone with little of water into a paste for brilliant scarlet.

Shades of yellow

1. Light yellow — Juice of broad bean (*Dolichas lablab* Linn.) or aquatic *helencha/hincha* (*Enhydra fluctuans* Lour.) leaves and lime are mixed together.
2. Light yellow — Crushed down dry haldi pieces (Turmeric-*Curcuma longa* Linn.) are immersed in water, and the yellow colour permeates from pieces gradually into the water. Thereafter, the liquid is strained through cloth, and boiled resulting in a yellow dye of fleeting nature. To achieve colour a brilliant tone a little shell-lime is added. Occasionally peeled off undried turmeric is grated to paste for yellow colour. *Haldi* is modified underground stem-rhizome.
3. Yellow — in two ways :-
 - (a) Triturated stony *alamati/alapather/peuri* (Chrome yellowan earth colour) piece on saddle-quern, and the paste thus, formed is mixed with gummy water to produce yellow (*basanti*) ochre. The paste often, is dried up for future use.
 - (b) Powdered much burnt hearth's earth.

4. Bright yellow — Conch shell powder is added to the light yellow colour of turmeric or leafy mixture of broad bean or *helencha*.

Shades of green

1. Light green — Extracted juice of broad bean or *helencha* leaves produces light green, and addition of a little amount of blue turns it into a darker green pigment.

2. Green — Juice of neem (*Margosa-Melia azadirachta* linn.) leaves produces green colour. Neem acts as a preservative of the organic materials of *pat* against insects infestation.

Sky colour — in two ways :-

1. (a) Fully burnt out blackish coal pieces, after wringing off their white coatings by hands are rubbed into paste.

(b) Extracts of *pui-mitali* mixed with *alamati*.

Royal blue

1. Earlier *nil* (blue) was obtained from indigo plant (*Indigofera tinctoria* linn.), once had an extensive cultivation and luxuriant growth in West Bengal. Indigo plants after being chopped up into small pieces used to be decomposed into water, and then the liquid obtained was boiled. The decoction, thus formed produced royal blue dye. Shell-lime and root of *al* plant (*Indigofera tinctoria* linn.) used to be mixed together to achieve permanence of the blue colour. *Al* plants grow for three years, and attain 5 feet height. The woody parts of older roots used to be cut into small pieces, and decomposed in water, and allowed to settle for about 12 hours. A thick deposit was formed, and it was transformed into a granular state through boiling.

But nowadays, they solely depend on available commercial blue.

Grey colour

1. Mingling of finely pulverised red-brown burnt sienna and lime together.

Shades of black

1. Grey black — Rice grains are roasted to black, and then pounded and strained finely, plus water.

2. Light black — Rubbed down pieces of wood charcoal plus water.

3. Deep black — Lamp-soot either of hurricane-lantern glass or of cooking earthen pot when mixed with very little water. Lamp-soot with a few drops of gummy water is pasted 10-15 minutes thoroughly with finger tip for deep black of most preference. If more water pours by any chance the soot will float allowing little or no scope to mix into paste.

White colour

1. Limestone chalk is pounded well and wrung repeatedly through a piece of cloth till it is free from any particles, and then dried.

Nowadays, chalk lumps are readily available from the market at a rate of Rs. 8-10 per kilogramme.

It is an observable fact that lime is an ingredient mixed essentially with all vegetable dyes for permanence and brilliance. From the conservation point of view addition of a little lime is a precautionary measure against putrefaction of colours. Certain *patuas* of Bankura district use, of course, rarely conch shell dust in small quantity, purchased from local market, which acts as lime (calcium carbonate) for extra binding, permanence and dazzling.

Lime is obtainable from two sources :

1. Shells of *jhinuk* (Bivalve-*lamallidens*) are burnt to produce pure shell-lime.

2. *Ghuting/ghusum* (Calcified nodule) collected from the field is burnt and then ground up into powder with mortar and pestle, steeped them in water and sieved out the impurities from the creamy consistency, which produces lime through drying. Of these two, shell-lime is preferred for better result.

All the colour ingredients are mixed with a gummy substance as a binding medium its durability, as well for permanent brilliance. Gum is extracted from two vegetable sources.

1. Green *bel*, locally called *kasher bel* (Woodapple – *Aegle marmolos* Correa.) fruit is parted into halves, and the exposed portions are put downwards for leaching out its viscous secretions, known popularly as *beler atha*. Often its gluey material with seeds is extricated out, wring thoroughly and seive through cloth. Often the gluey seeds are kept after drying properly and prepare gum in the process stated above.

2. Viscid exudation of *babul/babla* (*Acacia arabica* Willd.) tree is diluted with water to its required thickness, and kept in glass bottle for continuous use. A little of the solution is mixed to colour at the time of painting. Use of thick *babul* adhesive has a tendency to flake off with paint layer in the summers due to high rise of temperature, and hence, a limited use.

Patuas consider red, yellow, blue, black and white as the primary colours. A range of colour varieties is produced by mixing two or more primary colour ingredients together, and the medley compound colour thus produced is known as *bhanga* (broken-mixed/secondary) colour. Certain nuances of shades and tones of the derivated colours are achieved by adding different colour ochres in different concentrations, and the intended degree whether it attained is tested by the application of colour strokes on palm or on a piece of paper. The *pat* artists, of course, have a full play to the entire gamut of colour and its gradations.

Most preferred season for collecting the earth raw materials is the *Chaitra-Baishak* (March-May) months, as the hilly jungles are mostly dried up offering an opportunity for easy searching and clear visibility. The *patuas* call them *pahari* colours, as the colour yielding earth ochres and *bel* and *neem* plants are mostly available in abundance in rugged hilly areas. The colour yielding vegetal plants are mostly collected in *Pause-Magh* (January-February) months. Easily available seasonal materials are utilised for colour preparation. It is a matter of no little significance that once they prefer these invincible colours. Earlier they do not make use of readymade poster-colours, which they consider, do not produce the required colour tone to their entire satisfaction. But in the present days the *patuas* use mostly the readymade commercial colours for its easy availability though they find it difficult to afford the high price due to their economic hardship. All the colour ingredients are mixed with gummy water, as solvent, and mixing is done in *mala* container, the parted lower half of a coconut shell or bivalve or earthen cup or nowadays even stainless steel small plate. Each colour requires separate palette.

But the traditional painters prefer the first two containers mentioned for the reasons :-

1. Slightly uneven surface of the *male* helps in *pisa* (rubbing) of the colour ingredients thoroughly.
2. True colour valve retains for long without decay.
3. Easy availability with no expenditure.

Preparation of brush

Patuas made *kalams* (brushes) of various sizes and points by themselves by entwining tufts of goat, horse or squirrel hairs to thin bamboo splits, the free ends of which taper to point, like skewer for pricking out dried up colour paste from container, when required. *Kalam* made of squirrel (*Funanbulus pennati*), known locally as Nepalee *indur* (rat) and hair of he-goat (*Capra-hircus*) is very smooth, supple and makes fine tip; and is exclusively suitable for rendering the curved lines of arched eye-browns, extended elliptical eyes and chin. Most of the *pat* painters do not use any imported brushes, except modern a few one.

Preparation of *pat*

Sanskrit word *Patta* connotes cloth, and *pat* signifies painting or *chitra alekhya* (picture narration). Ordinary paper, often of cheapest variety, newsprint and unprimed coarse thick handmade paper are used for making *pats*. Artists, nowadays, use solely semi-art paper, under trade name chinese art paper. Though it has much use yet artists expressed dissatisfaction as brushes are slipped away out of the intended lines to be drawn. *Pat* painting is called by them as *patlakha/patlikhan/tipan*. *Pat* paper selected if thin, two or more sheets are pasted one over the other with boiled arrowroot (*Maranta arundinacea* linn.) or sage (*Metroxylon sagus* Roltb.) or boiled rice paste to make it strong. Segmented pieces of paper is joined end to end with gum adhesive, nowadays with adhesive, like fevicol, vamicol to cover the intended length of the scroll. Scroll/*jarano pats* have variable length and breadth, usual measurements being 15', 18', 24' long and 1'2", 1'10", 2'8" broad. The width has local measurements, viz., 14, 22, 28, 32 *pune* (1 *pune* = 1 inch). To complete a *pat* measuring 15'x1'10" from starting to finishing is required nearly 25-30 days labour, and price of such a *pat* is Rs. 500 approximately. Besides scroll, square or rectangular *pat/chaupat/chaupakat* is also prepared.

Mounting of *Pat*

After completion of painting in earlier times on old cloth or a coarse mark in cloth base is mounted at back to reinforce it against wear and tear for repeated rolling and unrolling many times a day. But nowadays no such cloth piece is attached having an intention to sell it in cheaper rate. The two projected rear ends of the mounted cloth are sewn over thin bamboo sticks for rolling up the scroll. A string is attached to a stick to tie it up, when rolled and to serve as a loop to hang on a peg, when unfold, like maps.

Origin of *pat*

Regarding the origin of *pat* a story goes like that demon architect *Maydanab* was offered a man everyday as his food, and for that the people of *khandabana* (now a town in Nimar district of Madhya Pradesh) where *Maydanab* was living was in a terrifying condition. A *fakir* (*Mahommedan* mendicant), named *Suleman* was living in that locality. People approached to *Suleman Fakir* to rescue from the

suffering. *Gazi/Pir* took pity on them, and looked to *Maydanab* miraculously and burned into ashes. This incident was painted on a cloth in the form of a scroll *pat*. *Maydanab* and *Khandavbana* are associated with the epic story of the *Manabharata*. But the definite early literary evidence of *patakar* and *pat* is existed at the time of Mankhali Gosala (6th B.C.) of Nalanda, the founder of *Ajivika* community, who was the son of a *patakar*. The Buddhist and Jain literatures (6th B.C.) mentioned the activities of *sauviks/sauvaniks* (roadside *patuas*). Other such references are found in the works of classical Panini's *Ashtadhyayi* (3rd B.C.), Patanjali's *Mahavasya* (2nd B.C.) depicting *Kansabadh*, Kalidasa's *Avijnana Sukantalam* (5th A.D.), *Malabikagnimitram* (5th A.D.), Banabhatta's *Harshacharita* (7th A.D.), Bhavabhuti's *Uttarramcharita* (8th A.D.) and Vishakha Dutta's *Mudrarakhasas* (8th A.D.). The scrolls of Sanchi gateways are the visual architectural representation of *jarano pat*.

Subject matter of *pat*

Earlier, the subject matter is predominantly of *hindu* religion, as an example, the *Ramayana* and the *Mahabharata* epic stories, like *Sita harana*, *Ravanabadh*, *Balibadh*, *Sindhubadh*, *Andhamuni* and *pauranic* episodes, like, *Krishnaliala*, *Naikabilas*, *Nagabandhana*, *Kaliyadaman*, *Kansabadh*, *Chandimangal*, *Srimanta Sadagar*, *Kamale Kamini*, *Manasamangal*, *Behulabhasan*, *Shiva-Durga* family, *Chaitanyalila* with which the common people are closely associated, matured and grew with and in turn influence the people. Occasionally the subject matter is *muslim*, e.g., *Gazipat/Gizirpat*. *Gazi* is closely connected with the first *muslim* settlers into the forest tracts of the Sundarbans, and his control over the fiercest predatory tigers found there. Of course, *Gazi* is a *muslim* holy man, but venerated by both *hindus* and *muslims* for subduing the dangerous animals. Besides traditional *pauranic* legends in 15th A.D. *Chaitanyalila*, in *Muslim* period the *Gazipat* showing *Gazi Kalu Roy* with the Ganges prevalent mostly in Comilla and Barisal. Bangladesh and South Bengal. In the British India historical events, like, *sepoy* mutiny, *Palase battle*, *Sahib/Angrez pat* French revolution, *Santal* revolt in 1855, named *Chuar* revolution/*Santal hool* of famous *Sindho*, *Kanhu*, *Chand* and *Vairab* revilian brothers of *Bhagnadihi* village, 40 miles away from *Pakur*, tribal *Yampat/Yama pat* and *Jadu pat*. In recent times *patuas* are inspired with contemporary incidents, like dowry, bride burning, family planning, vote, *burgadar* (land lease), air pollution, flood, division of country, war, ecology, tree plantation, world wild life, illiteracy, freedom of women, assassination of Indira Gandhi, bank saving deposit, three hundred years of Calcutta, etc., what they considered significant of keeping the public fully aware of them. To forbear people from dowry *patua* composes :-

Meyar biyete pan ye jan khay
Galita gomansh se mastakete bay.

Transliteration : He who takes dowry in girl's marriage, will carry decomposed beef on head, as ultimate punishment.

Village Naya (via Pingla) in Midnapur can boast of producing *pat* on recent subjects. It indicates that the *patuas* are very responsive to the new ideas as an important media for mass communication. Suresh Chitrakar of Baraghata village in Birbhum district is a *Santal patua*. *Santal pats* are entirely naive and never come under any outside influence—Mughal, Rajput, Orissan or British. *Patuas* depict through folk painting moral teaching, national integration leading to solidarity of country and intructions to social diseases.

Division of panels

When the scroll is ready for painting (*varnalepan*) the artist star from top. Division of panels

and outline sketches are drawn to its entire length, either with very light red colour in general by the artists of all districts, particularly of Murshidabad and Midnapur; while with pencil preceding red colour by novice.

Stylistically *pat* painting of Bengal has the following schools depending on distinct local variations, namely as :-

1. Kandi school (originated from Majiara village) of Murshidabad. *Patuas* of Kandi sub-division and Birbhum follow the style. Special features are crowded figures with realistic details, all very linear and a flat decorative treatment. No profile frontal view.

2. Gankar school of Jangipur of Murshidabad. Now, almost extinct. Better in treatment than Kandi school. Face-three quarter profile, possibly attributed to the Rajasthani and Mughal tradition.

Murshidabad and Birbhum *pats* are basically *thnder* the influence of the Kandi school. The fundamental difference between Midnapur and Murshidabad, Birbhum *pats* are :-

- (a) Murshidabad, Birbhum *pats* use deep colours and details, while Midnapur, light colours and a few colour strikes suggest the *pat* figures.

- (b) Murshidabad, Birbhum scrolls are bigger, Midnapur shorter.

3. Tamluk school of Midnapur, subtle shading of flesh and double eye-brow often one tree shown as a forest. It has no perspective.

4. Bishnupur school of Bankura entirely naive in drawing, discretely highlighted with white dots and presentation with glaring and crude colours. In Birbhum the white dot pattern is known as *padmajal* for its transparency effect, a characteristic design appertaining to the Sassanian ring of 'pearls' on silks.

5. Hooghly school of Hooghly. Figures and colours are flat, gesture is purely symbolical, trees mere balls on stalks and shading to give a rounded effect.

Pat painting is a family art. Busy male artists sketch usually the outline of the figures as paper as per theme, and females apply colours over it in leisure periods, when male members are out for *pat* exhibition in villages. Women are under taboo to paint or even to prepare colours only during their menstruation periods and on wearing uncleaned apparels with a belief that colours prepared in foul state with decompose. Children lend their hands, as a part of mediocrity of training with pedantic care. But the fine works of eye, eye-brow, lip, chin are drawn by male experts. *Pats* are really works painted carefully, and full of wonderful artistic merit.

Each *pat* has many broad reclinear interconnecting vertical panels generally, one below the other and occasionally has subpanels oriented within the main vertical pannels, locally called as *pat chitra rachana* (composition). The ambit of each panel is bounded generally by lines. *Pat* panel are arranged commonly in vertical position and rarely in horizontal. Each register, either vertical or horizontal is surrounded immediately with conventional floral rosettes and foliages, often alternate, broad borders, known as *bab* a reminiscent of Mughal miniature idioms. *Sadar* (entrance door, the topmost first panel) is the towering panel, forming voluminous body form of the presiding deity or personnel detailing through articulation of drapery and naturalistic approach at middle, followed by other related pictorial representations of the important events of the theme, while other settings are even reduced to symbolic elements, decending down gradually, known as *charanachitra* in a dramatic sequence recalling an early

cinematography. In *Kamale kamini* or *Krishnalila* or *Chaitanayalila pat* heads the scroll with *Srimanta Sadagar* or *Krishna* or *Chaitanaya* as the case may be. Turning to contemporary themes, likes the Kakdwip steamer disaster or the love affair of a collage boy after an arranged marriage are headed with a large Goddess *Gangamata*, while tiger quintessentially associated with *Gazi* in *Gazipat*. Sometimes the *patuas* make iconographic errors, like showing the sacrifice of a snake instead of a cock at the end of *Behulabhasan*. In many cases emotion and character are not shown by expression, but by symbols. Naive figures are put in a lot of linear reduction and straight pleat, like, textile, often floriated is shown with great verve; while cloud with weirdly stylised or sea-waves with bands of increasing density or fire by triangular elements made up of bands of graded colours. Outlines of figures and floral designs are filled in with a prettification of flat colours retouched artistically with swift suneness of line with remarkable rhythmic effect by powerful facile *kalam*. Human figures in their spacing, movement and grouping in *pat* are drawn in stylisation with wonderful decoration produced by the rich assemblage of many different colours and shades. Poses are hieratic and stiff, and realistic anatomical detail and faces mostly in profile view or three quarter angular perspective, the eyes in full view, the trunk also in front view, the legs and feet again in strick or three quarter profile. Women, who are often shown bare breasted, are drawn with the breasts one behind the other, so that one is situated practically in the armpit. Further, a single figure is often shown in more than one plane – for instance, head in profile but shoulders full on to the viewer. Turning to the sphere of nature, a synthesis of cornucopia of different species of animals, birds, fishes and trees is noticed. These are painted in a highly stylised manner, again emphasising form rather than realistic representation. Immense variety of trees appear to be like nothing more than a forest of brightly and differently coloured lollipops. Each *pat* has a subtlety and variety of the artist's palette. Painting of figures is done usually against a large white background. They wash and clean brushes with a piece of cloth after each colour use. Painting does not follow any varnish coating whatsoever.

Visual display of *pat*

Gradual unfolding of long scroll (*dighal pat*) is done in an anti-clockwise untwisting of the *pat*, and during operation, in earlier times it is found generally-though not always to place it conveniently on a four legged low rectangular bamboo frame (*khat/chauki*), so that it is not soiled while rolling and unrolling a *pat* many a times daily. Unfolding of a *pat* is done, nowadays in squatting position, while exhibiting it to mostly unlettered but attentive villagers, who are viewing joyously the sequential scenes. Singing of own-composed ballad accompanies in narrating each pictorial representation of the panelled story, while body movement imitating dancing with tinkling anklet on foot follows. More pictures or singing is incomplete, rather each is complementary to each other to make *pat* exhibition a complete one. Few *patuas* used to attract audience by drumming a *damru* (drum). The painter and the reciter are usually the same person. Folk artists have a very retentive memory and slickness. The act of audio-visual display *pat khelan/chitan* is done by males only in public, and the song sung by itinerant bard is known as *chitrakathi* (picture letter). For doing this usually they move from nearby village to village, and they earn cash, more often *rich*, wheat, pulses, potato, bringle, vegetables, worn-out cloth and such other necessities offered by the audience. Wallet containing *pats* is their capital resource. Often they stay outside home for 3-4 days consecutively, when go out to distant villages. During such period they live in some villager's house, who provide them lovingly both food and shelter for right stays. They earn their livelihood through display of *pat* on road, in *hat/bazar* (market), fair and in *hindu* houses as the subject matter is *hindu* mostly. The semi-urban and urban audience give them cash money usually, while the villager, the kinds, which the *patuas* consider a better earnings for good quantity,

besides cordiality. Indeed the earnings of *patuas* of exceptional quality are more than the average ones. It should be remembered, after all, that *pat* painting was not done primarily for aesthetic, but for functional reasons. It is also observed irrespective of rural and urban audience are more enthusiastic with religious anecdotes and titillating aspects than recent matters, which fetch more earnings too in turn. The villagers, especially the women find more interest in oft-chosen fascinating characters of the *hindu* pantheon, like, *Andhamuni*, large flamboyant or inescapably grotesque *jatayu*, abduction of *Sita* by *Ravana*, *Tadaka*, *Marichbadh*, *Angada*, *Sugriva*, the monkey-king of *Kishkindhya*, *Kansa*, snake-demon *Kaliya*, *Mahadever sankhadan*, *Salban Raja* and outward journey of *Srimanta*. Often the classical interpretation and panels of *pat* differ slightly as the folk painters do it with their folk ideals, beliefs, own interpretation and local twists. They could not, however, depict the entire story of the *Ramayana* or the *Mahabharata* or the *Karya* on scroll, they paint only those episodes, which are interesting and could illustrate social ideals, lessons and morals through enjoyment. Vice and virtue, truthfulness, punishment meted out in the court of *Surya's* son *Yama*, the God of underworld attended by *Krishnabhoot*, *Kalabhoot* and *Chitra Gupta* to the unlawful act of greediness or sinners or for insulting women in the *Kaliyuga* as well reward to pious or even prostitute *Hiramon* taken to *Vishnulok* (heaven) by messenger of *Vishnu* after *Yama's* judgement in considering her largeness of charity and divine contemplation are emphasised mainly.

The forceful circular sweep, vivid colours, masterly brush strokes compact spacing, broad summery treatment and story telling all go to make the indigenous *pat* a popular piece of folk art, akin to *Rajasthani pabuji-ka-pad (pat)*. Narrative scroll painting, however is not a thing of past, it is a continuous and living process, still alive; but on its way to gradual obsolescence in rural Bengal. The future of *pat* is lamentable. The popularity of audio-visual display even to villages is markedly less due probably to impact of industrialization, taste and sentimentalization of the present populace and modernization. It is apprehended that *pat* is going to be replaced by the popularity of modern television, radio in rural areas. Again in the recent period the impact of oleographs in garishness has destroyed the very foundations of *pat*. Yet the *patuas* keep the *pat* art alive for the reasons:-

1. Love for their hereditary painting.
2. They find pleasure in the force of their traditional singing and painting.
3. To show their inner impulse of creative ability and artistic temperament.

Social and economic life of *patuas*

Patuas are poor, wretched, but frolic having no or little cultivable land. Earlier, they stayed at one place for sometimes, then moved elsewhere with their *pat* belongings, which is an indicative to a vagrant gypsy nature. The wandering habit was developed due to no attachment to agricultural lands. They are one section of *Bediya*, named as *Babajiya*, *Lave* or *Patwa* – pedlars and mountabanks, but sing song in praise of *Ram* and *Lakshman*, other groups being *Bazigar*, *Kabutari*, *Bhanumati*, *Dorabaz* – acrobates and conjurors, *Mal* or *Ponkwah* – extracting worms from the teeth, *Mir-shikar* or *Chirimar* – hunters and fowlers, *Samperi* – snake charmers, hawkers, *Shandars* – comb, loom reed maker and *Raisa Bediya* – work with zinc (Risley : 1981 : 1 : 83-85). “*Bediya*, the generic name of a number of vagrant gipsy-like groups, of whom it is difficult to say whether they can properly be described as castes” (Risley : 1981 : 1 : 83). They live hand to mouth with their low income. Level of literacy among the *patuas* is low. *Kalam Patua*, *Santanu Patua*, *Piyar Chitrakar* are the very few literate *Chitrakars*. Their

meagre meals, torn and dirty cloth betrayed their poor economic life. Females make dolls and reed brooms during spare times, and by selling those in local markets and fairs or *alta* and glass bangles to villagers they subsidized their family income. Some male members are working as ordinary agricultural labourer menial day labourer, masonry, palm, date palm leaf mat making, mobile cow doctor (*gobaidya*), snake charmer and loom reed (*shana*) maker (5/6 days required to complete a reed and costs approximately Rs. 120) to supplement their income. Banks granted loans to eligible individual *shana* outreprenues for promoting family income generation. Kalam Patua, young genius of village Chandpara, Birbhum has taken up painting on a new medium, like, silk cloth in *pat* style. Such a rectangular piece measuring 2' x 1.6' takes 3 days to finish, and the market price of one such is about Rs. 500. Before starting the actual painting the cloth is made ready beforehand by applying a thick paste made of boiled tamarind seeds and after drying it is polished well by rubbing with a smooth stone piece. Rarely painting is rendered directly on cloth. *Patuas* often painted popular gods, goddesses on rectangular paper pieces measuring 8" x 6" for large scale selling in cheaper prices.

The *patuas* stand out as a distinct craft group because of two reasons :-

1. Their artistic merit, and
2. Acceptance of art as a manifestation of life process.

Depth of imagination of their conceptual measurements are the two components for the quality and correctness of painting.

Art, to them is not simply a specialised trade, but it personifies their very attitude of life. The *pat* painting, they executed, glorifies their life activities, aesthetic tastes and inner strength of realisation about the incidents to be painted. They pursue, even in various odds, the works of *pat* painting not simply as means of their survival. Through the exposition of *pats* they interact with many groups of people in different settings. It is considered as a vibrant phenomenon, because it is intricately connected with their total life pattern. In evaluating it, specially in economic terms, may not reflect its correct pictures. Economically it may be less viable, but its social relevance still survives. *Patuas* are not mere painters, they are all – collectors, preparators, narrators and exhibitors. Looking at this great series of painting one can notice the way in which the artist uses highly stylised conventions for the depiction of recurring leatures. Scroll of narrative and aesthetic brilliance, so typical and enviable is produced in a nonelite tradition, where it is a series of paintings of considerable rarity.

Of all folk arts of Bengal, *pat* painting may be given the highest credit for education the sordid common masses effectively through means of audio-visual communication and masterly technique. In this particular idea this desolated art has a utilitarian purpose involving a form of pictorial expression of legends ending with morals to the *ghor kali* people.

Deterioration and revivalism of *pat*

Much more common form of recent deterioration of *pat* painting is carelessness, simple lack of sophistication, skill, cheap commercial tendency instead of loving attention with which their fathers worked on a *pat* for many days or even weeks. Scrolls are shorter, each panel is bounded often with plain borders, but not necessarily with simplified floral patterns into abstract running style, put signature, address, but not the dates and the omission of whole episode and haste finish are the features of presentdays *pats*. Earlier *pats* demonstrate a mastery of technique and a delight in detail as well as much longer than their moderndays counterparts, invariably unsigned for not being interested.

Efforts are to be taken to bring back this moribund famous art tradition of Bengal to its past glory at any cost. Revivalism of *pat* painting, composition of ballads and singing is feasible as the young generation is found willing to keep alive their family tradition of excellence as they possess hereditarily the character, skill, experience and above all holy writ quality. As a community they are bereft, helpless and a solitary example in India following combined rites of both *Hindu* and *Islam* religions showing a religious unity.

For revival of *pat* painting as well as to ease their sufferings they are in need of some incentives, developmental programme and facilities for which they have been demanding time and often are summarised as follows :-

1. Establishment of training centres, one in each district, where *patuas* are concentrated, for training and educating the budding folk artists to start painting a new under assiduous experts.
2. Advertise *pat* art through mass media. Interview with Sm. Gouri Chitrakar of Nirvayapur village, near Basudevapur in Midnapur, a President Award Winner, Ranjit Chitrakar of Naya, Via Pingla in Midnapur, who has shaken hands with the Duke of Edinburgh and Harendranath Chitrakar of Maligram in Midnapur, a balled composer and singer may be viewed occasionally through television as a source of inspiration to fellow members, who are practising the art.
3. Distribution of *khas* land to rehabilitate the landless artists, particularly those *patuas* of quality and poor continuing the tradition.
4. Marketing of *pats* directly between artists and buyers, not through middlemen, who rather enjoy the maximum benefit.
5. Liberal granting of loan through industrial and commercial banks to the intended artists or to co-operative should be initiated to assist the entrepreneurs or individuals for income generation. Minor artists may be furnished with easy grants for continuing the profession a fresh.

Note

1. Names and villages of some expert *patuas* districtwise are appended.

Midnapur district

- (i) Village – Amdabad
Motilal Chitrakar,
Santosh Chitrakar
- (ii) Village – Maligram
Harendranath Chitrakar
- (iii) Village – Moradpur, on the way to Digha
Niranjan Chitrakar
- (iv) Village and P.O. Naya, Via Pingla
Bishnupada Chitrakar, Amar Chitrakar, Puspa Chitrakar, Dhukhushyam Chitrakar, Gurupada Chitrakar, Ranjit Chitrakar, Piyar Chitrakar,
Yaquoob Chitrakar.

- (v) Village – Nandigram
Bapi Chitrakar
- (vi) Village – Nankarchak
Isan Chitrakar
- (vii) Village – Nirvayapur, near Basudevapur
Sm. Gouri Chitrakar
- (viii) Village – The Kuachak, near Tamluk, P.O. Kumarchak
Ajit Chitrakar
- (ix) Village – Karkarda, P.O. Demari
Bablu Chitrakar
- (x) Village – Habichak, P.O. Nandapur – 721625
Niranjan Chitrakar

Birbhum District

- (i) Village and P.O. Satpalsa – 731234, near Sainthia Banku Patua, Santanu Patua, Sudarshan Chitrakar, Sukuruddhin Chitrakar.
- (ii) Village and P.O. Chandpara – 731241
Kalam Patua
- (iii) Village – Baghagaria
Ramzan Chitrakar
- (iv) Village – Baraghata, A Santal village, near Suri Suresh Chitrakar, a Santal *patua*.

Murshidabad District

- (i) Village – Gokarna, P.O. Kandi
Lalmohan Patua

2. *Sarvasri* Gurupada/Jumman Chitrakar, Dukhushyam/Osman Chitrakar, Bablu Chitrakar, Ajit/Nemaji Chitrakar (often called Mistri), Niranjan/Rajab Ali Chitrakar, Santanu Patua (no *muslim* name), and Lalmohan Patua are my informants, to whom I am grateful for their generous information. My greatest debt is to Kalam Patua, a very young and intelligent one and Banku Patua for helping me much for this indepth study.

Banku Patua, a master *pat* artist had been to London in connection with the Festival of India in 1982 and Washington, U.S.A. with the Aditi Exhibition in 1985, besides attending fairs organised by the Crafts Museum of the All India Handicraft Board in 1978 and the Sangit Natak Academy, New Delhi. He is member of the Murshidabad Lokayat Shilpi Samsad at Kandi, organised by Pulakendu Sinha.

REFERENCES

- Archer, W.G., *Bazar Paintings of Calcutta, the Style of Kaligath*, London, 1953.
- Bhattacharya, Binoy, *Cultural Oscillation : A Study on Patua Cultural*, Naya Prakash, Calcutta, 1980.
- Blurton, T. Richard, 'Continuity and Change in the Tradition of Bengali pata-painting' in ed. Dallapiccola, A.L. and S. Zingel-Avé Lallemand, *Shastric Traditions in Indian Arts*, Stuttgart, 1989.
- Datta, G.S., 'The Indigenous Painters of Bengal' in the *Journal of Indian Society of Oriental Art*, Vol. I, 1933.
- Das, Amal Kumar, Roy Choudhury Bidyut Kumar & Raha, Manis Kumar, *Hand Book on Scheduled Castes and Scheduled Tribes of West Bengal*, Special Series No. 8, Bulletin of the Cultural Research Institute, Tribal Welfare Department, Government of West Bengal, Calcutta, 1966.
- দত্ত, গুরুসদয়, পটুয়া সঙ্গীত, কলিকাতা বিশ্ববিদ্যালয়, ১৯২১।
- দত্ত, গুরুসদয়, পটুয়ার প্রাচীন ইতিহাস, বাংলার শক্তি, পৌষ, ১৩৪৫ (১৯৩৮)।
- Ghosh, D.P., 'An Illustrated Ramayana Manuscript of Tulsidas and Pats from Bengal in the *Journal of the Indian Society of Oriental Art*, vol. XIII, 1945.
- Painting on Folk Arts*, Kala Bhavan, Biswa-Bharati, Santiniketan, 1969.
- Patua Art-Development of the Scroll Paintings of Bengal Commemorating the Bicentenary of the French Revolution*, Alliance Francaise of Calcutta & Crafts Council of West Bengal, Calcutta 1989.
- Roy, Sudhansu Kumar, *The Artisan Castes of West Bengal and Their Crafts, The Tribes and Castes of West Bengal, Census 1951*, West Bengal, 1953.
- Risley, H.H., *The Tribes and Castes of Bengal, Ethnographic Glossary, Vol. I, (Reprint)*, Firma Mukhopadhyay, Calcutta, 1981.

NOTES ON CERTAIN MEDICINAL PLANTS USED BY THE MUNDAS OF RANCHI DT., BIHAR.

S. K. MONDAL

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Abstract : The paper deals with some medicinal plants used by the Mundas of Ranchi District in Bihar. This account is the resulting out of intensive botanical collections of medicinal herbs used by the Mundas. The survey was made in different seasons between the year 1983 to 1987. The paper has yielded a total number of 131 spp. distributed under 106 genera and 43 families, which are arranged alphabetically.

Introduction

THE Mundas numbering over a million constitute one of the most populous tribes in India. Their largest concentration is in Bihar confined mostly in south-eastern portion of the state in the district of Ranchi and Singhbhum.

Ranchi district is situated in the Chotonagpur division of Bihar lying between 20°20' and 23°43' N. and 84°0' and 85°84' E. and having an area of 18500 sq. km. It is surrounded on the north by the district of Palamau and Hazaribagh, on the east by Manbhum, on the south by Singhbhum and tributary state of Gangpur and on the West by Jashpur and Sarguja and Palamau district.

The survey was carried out in Muralipatra, Sosomuthi, Jharia, Dewari in Tamar block where Munda population is about 90%; Kotanghatu, Murgidih, Dami, Pancha and Taimara in Bondu block where the population is about 60%; Panchahagha, Korakel, Jibantoli, Sarigaon and Malida in Morhu block where the population is about 80%; Sorjoma, Lumlum, Daringhutu; Burudi and Duli in Moroughada block where the population is about 75%; Arki and surrounding forests, Bari and surrounding forests and Sode valley where Munda population is about 100%. Survey was also carried out at Birta mountainous forests, Kainara forests in Tarpa block and Namkum in Khunti block of Ranchi district.

The ethnobotanical studies of various areas of Bihar have been carried out by Gupta (1981), Jain (1961, 1981), Jain and Tarafdar (1970), Pal and Srivastava (1976), and Pal (1977), but very little is known about the traditional herbal medicine used by the Mundas. The present piece of work is a step towards the preparation of less known medicinal plants of Ranchi district, Bihar.

In connection with the studies on medicinal plants used by the Mundas, the district was visited in different seasons during the period 1983-1987 and a good number of specimens belonging to 43 families, 106 genera and 131 spp. from different forest ranges were collected.

Methodology

The study included interviews of many local informants and healers during field work. Information regarding medicinal use of individual plants and preparations in the form of recipe actually used by the Mundas was compared with the literature available in Industrial Section, Indian Museum library and library of the Anthropological Survey of India. The herbal physicians were interviewed from time

to time to examine the information supplied by them. The plants have been carefully identified with the help of authentic specimens housed in Industrial Section, Indian Museum (BSIS) and Central National Herbarium (CAL). The voucher specimens deposited in the herbarium of the Industrial Section, Indian Museum, Botanical Survey of India (BSIS).

Enumeration

The specimens have been arranged alphabetically according to their latest nomenclature which are followed by families and local mundari names. In addition the medicinal use of plants as collected from different Munda tribes have also been given.

The following abbreviations are used :

Loc = Locality, M = Mundari name

Abrus precatorius L. (Leguminosae)

Krarjni (M.); Dami, Bondu (Loc.); Mandal et al 5947.

Root boiled with the seed oil of *Pongamia glabra* is applied in Gout. Leaves are used in cold and cough.

Abutilon indicum (L.) Sweet (Malvaceae)

Petty, Pushikatadaru (M.); Tamar (Loc.); Mondal et al 5037.

Paste of leaves or roots are taken for spermatorrhoea and urinary trouble. For easy delivery its root is hung around the neck of mother.

Achyranthes aspera L. (Amaranthaceae)

Chirchitti, Sitirkand (M.); Namkun (Loc.); Mondal et al 4448.

Paste from its root alongwith as afoetida is applied in the teeth-ache. Juice of leaves used in cut-wound and paste of the whole plant is applied in any burn to heal up.

Acorus calamus L. (Araceae)

Vasambu (M.); Jareya village, Tamar (Loc.); Mandal et al 5031.

Small piece of root is hung around the neck for remission of high fever.

Ageratum conyzoides L. (Asteraceae)

Bangru (M.); Mondurtoli (Loc.); Mandal et al 4588.

Plant boiled with oil is applied in rheumatism, plant juice is used in prolapsus ani. Paste of root is used as ointment during headache.

Alangium salvifolium (L.f.) Wang (Cornaceae)

(= *A. lamarkii* Thw.)

Ban Neoa, Ankol (M.); Arki (Loc.); Mandal et al 4618.

Leaves are used in rheumatism. Fruits with *Papaver somniferum* is taken to remove sleeplessness.

Alternanthera sessilis (L.) R. Br. ex DC. (Amaranthaceae) Vengari (M.); Panch ghagha (Loc.); Mandal et al 4543.

Paste of this plant alongwith coconut oil is applied in the muscular pain.

Ampelocissus divaricata (Wall. ex Lawson) Planch (Ampelidaceae)

(= *Vitis divaricata* Wall.)

Hensua (M.); Tapkara (Loc.); Mandal et al 4460.

Paste of roots is applied in the swelling of legs.

Anacardium occidentale L. (Anacardiaceae)

Rahar, Mundiri Kotai (M.); Birhur (Loc.); Mandal et al 4470.

Seed juice is used in the loss of memory and in sexual debility. Stem is given to the buffalo to take in case of mouth-sore.

Andrographis paniculata (Burm. f.) Wall. ex Nees (Acanthaceae)

Kalmech, Bhuinim (M.); Bandu patra (Loc.); Mandal et al 4418.

Juice of the plant is used in headache, indigestion, fever and also used as blood purifier. Root paste is used in leucorrhoea.

Anodendron paniculatum A. DC. (Apocynaceae)

Lamtani (M.); Duli (Loc.); Mandal et al 4604.

Paste of stem bark is applied in headache. It is also used in itching.

Antidesma acidum Retz. (Euphorbiaceae)

(= *A. ghaesembilla* Hk. f.)

Matta Sur (M.); Bandu Patra (Loc.); Mandal et al 4420.

Paste of roots and leaves are used in wounds. Shoots boiled with water is used in stomachic pain and fever.

Argemone mexicana L. (Papaveraceae)

Ghokula Kanta, Bakula janum (M.); Birhur (Loc.); Mandal et al 4500.

Ash of the plant alongwith the ash of the spines of Eagle marmeloes added with Borax are used in cough. Seeds are used in Diarrhoea and dysentery.

Argyreia argentea Choisy. (Convolvulaceae)

Brijtara (M.); Tamar (Loc.); Mandal et al 5055.

Paste of the plant is applied in rheumatism.

Asparagus royleanus David. (Liliaceae)

(= *A. gracilis* Royle ex Baker)

Digitized by Arya Samaj Pustakalaya, Gangotri
Tirshi Bishi (M.); Bondu Patra (Loc.); Mandal et al 4417.
Paste of root is applied in spermatorrhoea and also used as blood purifier.

Atulosia scarabacoides Bth. (Leguminosae)

Tonangrahari, Bon-Khurt (M.); Murulipatra (loc.); Mandal et al 5070.

The crushed seeds used as a remedy against tapeworm. Paste of the plant is given to the mother after child birth.

Bauhinia acuminata L. (Leguminosae)

Kainar (M.); Birhur (Loc.); Mandal et al 4511.

Decoction of stem-bark is applied in headache.

Bauhinia purpurea L. (Leguminosae)

Atmatti, Kathra (M.); Murulipatra (Loc.); Mandal et al 5074.

Paste of bark is applied in irritation of the skin and also used to wash ulcers.

Barberia prionitis L. (Acanthaceae)

Carri-jirri (M.); Birhur (Loc.); Mandal et al 4469.

The plant along with garlic and honey is applied in paralysis.

Bidens biternata (Lour.) Merrill & Sheriff (Asteraceae)

(= *B. pilosa* L.)

Huring (M.); Jibontoli (Loc.); Mandal et al 5974.

Bark is boiled with mustard oil is used as massage in the loss of body-temperature.

Biophytum sensitivum DC. (Oxalidaceae)

Durumbihir (M.); Jibontoli (Loc.); Mandal et al. 5981.

Paste of the plant is applied in case of prolapses of uteri. Paste of leaves is applied to wounds and cuts. Decoction of roots is given in gonorrhoea.

Blumea glandulosa DC. (Asteraceae)

Khai Khai Pachy (M.); Birhur (Loc.); Mandal et al 4502.

Paste of the plant along with common salt are used after delivery if the bleeding does not stop within a month.

Borreria articularis (L.f.) F. N. Will. (Rubiaceae)

(= *Spermacoce hispida* L.)

Guthri (M.); Sarjoma (Loc.); Mandal et al 6002.

Root is used during high fever and toothache. Decoction of herb is applied in headache.

Bougainvillea spectabilis Willd. (Nyctaginaceae)

Arhur (M.); Birhur (Loc.); Mandal et al 4473.

A mixture prepared from its leaves alongwith candy and cabab-chini is taken in jaundice.

Bridelia scandens (Roxb.) Willd. (Euphorbiaceae)

Panrerh (M.); Arki (Loc.); Mandal et al 4619.

Bark with the mud of termite is applied in the disorder of nerves.

Buchanania lanzan Spr. (Anacardiaceae)

(= *B. latifolia* Roxb.)

Velo (M.); Khudimari (Loc.); Mandal et al 4620.

Seeds boiled with mustard oil is applied in snakebite or any poisonous bite. It is also applied in throat sore.

Bulbostylis capillaris Kunth. (Cyperaceae)

Sunum Sanga (M.); Jummadag (Loc.); Mandal et al 4578.

Paste of roots is taken in intestinal pain and also in constipation.

Butea monosperma (Lamk.) Taub. (Leguminosae)

(= *B. frondosa* Koem. ex Roxb.)

Murup (M.); Mahuatoli, Bondupatra (Loc.); Mandal et al 4413.

Bark boiled with water is taken in spermatorrhoea.

Paste of fruits are used for worm of intestine.

Calotropis procera R. Br. (Asclepiadaceae)

Polteri (M.); Namkum (Loc.); Mandal et al 4425.

Paste of roots is applied in headache and dog-bite.

Poultice of leaves is given to the mother after delivery to remove abdominal pain.

Carissa carandas L. (Apocynaceae)

Karekai (M.); Budhatoli (Loc.); Mandal et al 4567.

Root oil is applied in rheumatic pain. Decoction of leaves is given in case of fever.

Cassia hirsuta L. (Leguminosae)

Chankar (M.); Timara (Loc.); Mandal et al 5918.

Root is used as an amulet for the babies affected with rickets.

Cassia occidentalis L. (Leguminosae)

Morong chakenda (M.); Jummadag (Loc.); Mandal et al 4575.

Root is boiled with mustard oil is applied in lumbago.

Paste of seeds is applied in headache. Juice of leaves is used in skin diseases.

Cassia tora L. (Leguminosae)

Panevar (M.); Murhu (Loc.); Mandal et al 4526.

Plant boiled with the seed oil of *Pongamia glabra* is applied in irritation of the skin.

Catunaregam spinosa (Thunb.) Tiruv. (Rubiaceae)

(= *Randia dumetorum* (Retz.) Poir in Lamk.

Dhelakonta, Patoha (M.); Budhatoli (Loc.); Mandal et al 4565.

Bark is given to the diarrhoea and dysentery. Leaves and barks are used in the throat sore of the cattle.

Celastrus paniculatus Willd. (Celastraceae)

Kujuri (M.); Namkum (Loc.); Mandal et al 4437.

Fruits are boiled with mustard oil is applied in the throat-sore and tongue. It is also used in wounds and swellings.

Celosia argentea L. (Amaranthaceae)

Harhapota (M.); Jummadag (Loc.); Mandal et al 4576.

Paste of root alongwith *Oriza sativa* is taken in blood dysentery. Seeds are used in diarrhoea and mouth sore.

Chromolaena odorata (L.) King & Robinson (Asteraceae)

(= *Eupatorium odorata* (L.) King & Robinson (Asteraceae)

Chirrata (M.); Birhur (Loc.); Mandal et al 4467.

Powder of dry plant is used with cold water in the pain of stomach.

Clerodendrum phlomoides L.f. (Verbenaceae)

Ami (M.); Murgidih forest (Loc.); Mandal et al 5922.

Decoction of root is used in gonorrhoea. Paste of leaves heated with lime is applied on swellings.

Clerodendrum Viscosum Vent. (Verbenaceae)

Bhant (M.); Namkum (Loc.); Mandal et al 4428.

Roots are used in skin diseases. Leaves boiled in water is applied for the tick of cows.

Coix lachryma-jobi L. (Gramineae)

Sankru (M.); Tamar (Loc.); Mandal et al 5036.

Juice if root is taken for easy delivery. Seed is used for preparing the intoxicated medicine.

Coldenia procumbens L. (Boraginaceae)

Khapra (M.); Cyco forest (Loc.); Mandal et al 4624.

Alcoholic extraction of the plant is used in beriberi. The leaves are ground and applied in rheumatic swellings.

Crotalaria bialata Schrank (Leguminosae)

(= *C. alata* Buch.- Ham. ex D. Don)

Bir-Jinri (M.); Bondu Guttu (Loc.); Mandal et al 4422.

Paste of root with mustard oil is applied in the inflammation of leg muscles and also used in the muscular pain.

Crotalaria juncea L. (Leguminosae)

Sannai (M.); Tamar (Loc.); Mandal et al 5043.

Paste of root is taken in snake-bite.

Crotalaria prostrata Roxb. (Leguminosae)

Jhun-Jhunia (M.); Namkum (Loc.); Mandal et al 4432.

Roots are taken to clear menstruation. Paste of root is applied to wounds.

Crotalaria spectabilis Roth (Leguminosae)

(= *C. sericea* Retz.)

Jenjaru (M.); Tamar (Loc.); Mandal et al 5044.

Paste of leaves is applied in whitlow.

Croton sparsiflorus Morong (Euphorbiaceae)

(= *C. bonplandianum* Baill.)

Chirchitti, Putari (M.); Birhur (Loc.); Mandal et al 4485.

Juice of root alongwith honey is given in Titanus. Paste of leaves is applied in sting bite. Roots and leaves boiled with the seed oil of *Pongamia glabra* is used in swellings.

Cuscuta reflexa Roxb. (Convolvulaceae)

Nirmuli (M.); Tamar (Loc.); Mandal et al 5038.

Plant boiled with cocunut oil is applied to prevent falling of hair and in skin diseases.

Cyperus compressus L. (Cyperaceae)

Sunum Sanga (M.); Fudi River Bank (Loc.); Mandal et al 4556.

Paste of root is taken in stomach pain.

Datura metel L. (Solanaceae)

Kanaka (M.); Topkara (Loc.); Mandal et al 4450.

Paste of seeds alongwith common salt (Sodium Chloride) is applied in severe headache.

Derris indica (Lamk.) Bennet (Leguminosae)

(= *Pongamia glabra* Vent.)

Pongam (M.); Namkum (Loc.); Mandal et al 4446.

Oil of seeds is very useful to keep the brain cool. It is also applied in boils. The juice of stem-bark is taken to remove acidity.

Desmodium triflorum DC. (Leguminosae)

Lath-lathia, Kudaliya (M.); Murulipatra (Loc.); Mandal et al 4412.

Paste of plant alongwith card are taken in diarrhoea. The paste is also applied in wound.

Diospyros exsculpta Buch-Ham. (Ebenaceae)

(= *D. tomentosa* Roxb.)

Temru, Kyon, Tirril (M.); Duli village (Loc.); Mandal et al 4601.

Paste of fruits with sugar is taken in the pain of stomach.

Diplocyclos palmatus (L.) Jeffrey (Cucurbitaceae)

(= *Bryonia laciniosa* L.)

Sibalingai (M.); Tamar (Loc.); Mandal et al 5045.

Seeds are used in case of sterility of women. It also be taken during indigestion.

Elephantopus scaber L. (Asteraceae)

Samudulan (M.); Tamar (Loc.); Mandal et al 5013.

Herb boiled with mastard oil is applied in any muscular pain. Paste of root is taken for spermatorrhoea and cough.

Enhydra fluctuans Lour. (Asteraceae)

Harkuch (M.); Tamar (Loc.); Mandal et al 5010.

Paste of herb is taken in heart diseases. Leaves are applied in skin and nervous affections.

Erigeron karvinskianus DC. (Asteraceae)

(= *E. mucronatus* DC.)

Latmi (M.); Namkum (Loc.); Mandal et al 4435.

Paste of leaves and roots alongwith wine is given in snake-bite.

Euphorbia hirta L. (Euphorbiaceae)

Dudalie (M.); Tamar (Loc.); Mandal et al 5011.

Juice of plant is given in case of convulsions.

Euphorbia orbiculata H. B. K. (Euphorbiaceae)

(= *E. microphylla* Heyne)

Ilai-Kalli (M.); Kadma village (Loc.); Mandal et al 4406.

Root oil is applied in the inflammation of muscles and veins. It is also used in belly troubles.

Evolvulus alsinoides L. (Convolvulaceae)

Chucru (M.); Mahuatoli (Loc.); Mandal et al 4409.

Plants boiled with mustard oil is applied in rheumatic pain and pain of muscle.

Ficus benjamina L. (Urticaceae)

Burkaisa, chummanesha (M.); Burudi (Loc.); Mandal et al 4600.

Paste of root alongwith candy is taken in spermatorrhoea.

Ficus rumphii Blume (Urticaceae)

Payar (M.); Cyco forest (Loc.); Mandal et al 4622.

Twigs and latex of leaves boiled in mustard oil is applied in ottorrhoea.

Ficus semicordata var. *conglomerata* (Roxb.) Corner. (Urticaceae).

[= *F. cunia* Buch.- Ham. var. *conglomerata* (Roxb.) Kurz.]

Anri, Poroh (M.); Namkum (Loc.); Mandal et al 4433.

A piece of root is hung with hair to prevent hair falling. Fruit is used for aphthous complaints.

Ficus tinctoria ssp. *parasitica* (Willd.) Corner (Urticaceae)

(= *F. gibbosa* King)

Ghusa-Hessa (M.); Daring-Guttu (Loc.); Mandal et al 4598.

Paste of stem-bark alongwith seeds of *Phaseolus calcaratus* is taken to increase lactation. Bark is also used as purifier of blood and urine.

Fimbristylis hookerianus Boeck. (Cyperaceae)

Sunum sag (M.); Bondu-Patra (Loc.); Mandal et al 4414.

Paste of root is used in the pain of stomach.

Fissendocarpa linifolia (Vahl.) Bennet (Onagraceae)

(= *Ludwigia hyssopifolia* (G. Don) Exell.)

Sukuri (M.); Tamar (Loc.); Mandal et al 5002.

Herbs boiled with water is taken in fever after delivery.

Flemingia macrophylla (Willd.) O. Ktze. (Leguminosae)

(= *F. congesta* Ait.)

Ote-garsul (M.); Kurakel, Morhu (Loc.); Mandal et al 5960.

Root boiled with seed-oil of *Pongamia glabra* is applied in wound, ulcers and swellings. Juice of leaves is applied in the eye trouble.

Glossogyne bidens (Retz.) Alston (Asteraceae)

Chour-gandha (M.); Namkum (Loc.); Mandal et al 4431.

Paste of root with honey is applied in the sore of mouth and toothache.

Grewia hirsuta Vahl. (Tiliaceae)

Kakarundah (M.); Murulipatra (Loc.); Mandal et al 5072.

Paste of root in water is applied in the breakage of bones, swellings and wounds.

Hibiscus connabinus L. (Malvaceae)

Kudrum (M.); Tamar (Loc.); Mandal et al 5019.

The juice of flowers mixed with the seeds of *Piper nigrum* and sugar is taken in biliousness. Seeds are employed externally as poultice for pains and bruises.

Paste of leaves is applied in whitlow.

Hygrophila auriculata (Sch.) Heine (Acanthaceae)

Gonka-agia (M.); Tamar (Loc.); Mandal et al 5001.

Paste of seeds with candy is taken for spermatorrhoea. Leaves and roots boiled in mustard oil is applied for irritation.

Indigofera arrecta Hochst. ex A. Rich (Leguminosae)

Nil-Beri (M.); Panchghagha (Loc.); Mandal et al 5986.

Juice of the herbs is taken in cold and cough.

Indigofera linifolia (L.f.) Retz. (Leguminosae)

Torki (M.); Tamar (Loc.); Mandal et al 5017.

Paste of herb in water is given in high fever. The plant alongwith *Euphorbia thymifolia* is used for amenorrhoea.

Indigofera sumatrana Gaertn. (Leguminosae)

Jirhur (M.); Namkum (Loc.); Mandal et al 4444.

Paste of herb mixed with kerosine oil is applied in gout.

Ipomoea hederifolia L. (Convolvulaceae)

Katkoa (M.); Murgidih forest (Loc.); Mandal et al 5921.

Paste of seeds is taken with hot water during strong diarrhoea.

Ipomoea mauritiana Jacq. (Convolvulaceae)

Erendi (M.); Panchghagha (Loc.); Mandal et al 5983.

Herb burnt with ghee is applied in tongue affection.

Ixora cuneifolia Roxb. (Rubiaceae)

Vedchi (M.); Namkum (Loc.); Mandal et al 4441.

Stem-bark boiled in water is taken in the pain of stomach and for headache.

Ixora nigricans R.Br. ex W. & A. (Rubiaceae)

Udappu, Khudiful (M.); Namkum (Loc.); Mandal et al 4440.

Leaves are used in dysentery. Fruits boiled in mustard oil is used in gout.

Jasminum amplexicaule Buch.-Ham. ex G.Don (Oleaceae)

Ban-Neware (M.); Bonai River Bank (Loc.); Mandal et al 4541.

Paste of leaves is taken to cheque heavy bleeding during menstruation.

Jatropha curcas L. (Euphorbiaceae)

Jangli-arandi (M.); Tapkara (Loc.); Mandal et al 4452.

Juice of leaves is used as an external application for piles. Root bark is used externally for sores. Shoot is used as brush in tooth-ache.

Justicia adhatoda L. (Acanthaceae)

Bakash-Patti (M.); Panchghagha (Loc.); Mandal et al 5985.

Juice of leaves is given in the swellings of beri-beri.

Justicia gendarussa L.f. (Acanthaceae)

Nilinargandi, Kari-Jiri (M.); Futcaltoli (Loc.); Mandal et al 4606.

Juice of leaves with bit salt is taken to remove the wind of stomach. Juice of also dropped into the ear for earache and into the nostril for hemicrania.

Lantana camara L. (Verbenaceae)

Ghaneri, Putsu (M.); Kadma (Loc.); Mandal et al 4402.

Juice of roots is applied externally in snake-bite.

Pounded leaves are applied to cuts, ulcers and swellings. A decoction of leaves and fruits is used as a lotion for wounds.

Launaea asplenifolia DC. (Asteraceae)

Birmalla (M.); Tamar (Loc.); Mandal et al 5009.

Juice of leaves is dropped into the ear for earache.

Leonotis nepetaefolia R. Br. (Labiatae)

Agia-janum, Thanail (M.); Tamar (Loc.); Mandal et al 5004.

Ash of plant with coconut oil applied externally in skin diseases. Ash of flowers are applied to scalds and burns.

Leucas cephalotes Spr. (Labiatae)

Gohmanaki ara (M.); Sarjoma forest (Loc.); Mandal et al 6004.

Juice of leaves is taken in indigestion and high fever. A syrup from flowers is used for coughs and cold.

Lippia javanica (Burm. f.) Spreng. (Verbenaceae)

Daru-Kainiba (M.); Murgidih forest (Loc.); Mandal et al 5923.

Paste of leaves is applied externally in the pain of nerve.

Ludwigia perennis L. (Lythraceae)

Sukuripota, gara-Sirgiti (M.); Panchghagha (Loc.); Mandal et al 4542.

Plant boiled in mustard oil is rubbed on the body for reducing fever. Leaves and fruits are used in night-fever.

Ludwigia prostrata Roxb. (Lythraceae)

Huring rangaini (M.); Namkum (Loc.); Mandal et al 4427.

Leaves are applied for aching muscles and toothache.

Melilotus alba Lamk. (Leguminosae)

Khandai, Rashnighas (M.); Birhur (Loc.); Mandal et al 4524.

Juice of leaves alongwith mustard oil is applied in ear-ache.

Mimosa pudica L. (Leguminosae)

Lojowni, Durum-junum (M.); Panchghagha (Loc.); Mandal et al 5995.

Paste of plants with milk is given to a sleepless person for deep sleep. Paste of leaves is applied to grandular swellings, sores and piles.

Murraya koenigii (L.) Spreng. (Rutaceae)

Bandar-gori, gandhela (M.); Kurki forest (Loc.); Mandal et al 4535.

Paste of leaves with rock salt and oil of *Pongamia glabra* is applied in Lumbago. Juice of leaves is taken in dysentery and diarrhoea. Juice of root is taken in kidney pain.

Ocimum sanctum L. (Labiatae)

Tunrusi (M.); Kothatoli (Loc.); Mandal et al 4533.

Decoction of root is given in malarial fever.

Juice of leaves is applied in skin diseases, ear-ache and head-ache.

Ottelia alismoides Pers. (Hydrocharidaceae)

Lundi-ara (M.); Dami, Bondu (Loc.); Mandal et al 5955.

Leaves are applied as poultices on arms and legs in fever. Flowers are taken in excessive bleeding during menstruation.

Peltophorum pterocarpum (DC.) Becker ex K. Heyne (Leguminosae)

Makar-dhuj (M.); Birhur (Loc.); Mandal et al 4471.

Juice of leaves alongwith common salt (Sodium Chloride) is taken in constipation. Decoction of bark is taken in dysentery.

Phyllanthus fraternus Webster (Euphorbiaceae)

Mui-ara, Mui-koa (M.); Suranda, Morhu (Loc.); Mandal et al 5979.

Paste of herb is taken in fever, diarrhoea and dysentery. Roots are used in jaundice.

Physalis minima L. (Solanaceae)

Anripotka (M.); Namkum (Loc.); Mandal et al 4447.

Paste of fruits with the fruits of *Shorea robusta* is applied in the pain of breast.

Polygonum barbatum L. (Polygonaceae)

Garara, Naiara, Sir-gitti (M.); Fudi River bank (Loc.); Mandal et al 4555.

Root alongwith the seeds of *Piper nigrum* is taken after delivery to remove weakness.

Prunus persica Benth. (Rosaceae)

Shaftalu (M.); Birhur (Loc.); Mandal et al 4497.

Paste of leaves is taken to increase blood in anoemia.

Pseudognaphalium luteo-album ssp. *affine* (D.Don) Hillard & Burt. (Asteraceae)

Hichi-sing (M.); Jummadag (Loc.); Mandal et al 4579.

Leaves and flowers are inhaled in case of cold and cough.

Psidium guajava L. (Myrtaceae)

Tamrash (M.); Birhur (Loc.); Mandal et al 4474.

Juice of leaves are applied in wounds and ulcers.

Juice of flowers are taken in bronchities and eye-sore. Paste of fruits and leaves candy are applied in the sore of tongue.

Pterospermum acerifolium Willd. (Sterculiaceae)

Muchkund (M.); Morhu (Loc.); Mandal et al 4527.

Paste of flowers alongwith sugar is taken in spermatorrhoea and blood troubles.

Saraca asoca (Roxb.) De Wilde (Leguminosae)

Jasundi (M.); Birhur (Loc.); Mandal et al 4496.

Paste of roots alongwith *Cissus quadrangularis* is used in dysentery and piles. Flowers are used as uterine tonic.

Scoparia dulcis L. (Scrophulariaceae)

Muhari, Madukam, Chinibuta, Koara (M.); Tapkara (Loc.); Mandal et al 4462.

Juice of leaves dropped into the ear affected with pus. It is also used in fever and cough and as a gargle for tooth-ache. Juice of roots is taken in diarrhoea and dysentery.

Sida acuta Burm. f. (Malvaceae)

Ipirpijon (M.); Birhur (Loc.); Mandal et al 4525.

Leaves are used in rheumatic affections. Leaves boiled in mustard oil is applied in testicular swellings. Juice of roots is applied in wounds and ulcers.

Sida cordifolia L. (Malvaceae)

Marang lupa (M.); Lapunghatu (Loc.); Mandal et al 4621. Leaves are used in dysentery and for poulticing ulcers.

Root is used in gonorrhoea, haematuria and leucorrhoea.

Sida rhombifolia L. (Malvaceae)

Pipiroing (M.); Murulipatra (Loc.); Mandal et al 5090.

Paste of plant is used in tuberculosis. Roots are used in the treatment of rheumatism and leucorrhoea.

Sida spinosa L. (Malvaceae)

Mindilat (M.); Arki (Loc.); Mandal et al 6070.

Leaves are used in cases of gonorrhoea. Decoction of root is applied in irritability of bladder.

Sida veronicaefolia Lam. (Malvaceae)

Jonki. Bariari (M.); Kothatoli (Loc.); Mandal et al 4532.

Juice of leaves is taken in spermatorrhoea and in diarrhoea of pregnant women. Pushing a piece of root into the hair of the sleepless patient gets deep sleeping. Seed is used in vertigo.

Smilax ovalifolia Roxb. (Liliaceae)

Hesua loreng, Pundi Marang (M.); Bondu Patra (Loc.); Mandal et al 4416.

Paste of root is used externally in the pain of stomach, venereal diseases and rheumatism.

Solanum anguivi Lamk. (Solanaceae)

Birhatta, Tokkot (M.); Jummadag (Loc.); Mandal et al 4577.

Plant boiled in water is taken in the case of Tuberculosis and cough. Root is used in catarrhal affections and nasal ulcers.

Solanum ferox L. (Solanaceae)

Rangoini (M.); Panchghagha (Loc.); Mandal et al 5992.

Fruits boiled in mustard oil is applied in pyrrhoea.

Solanum surattense Burm.f. (Solanaceae)

Bhat-Khataya (M.); Tamar (Loc.); Mandal et al 5035.

Paste of roots or fruits is applied in dental pain. Flowers are used in cold and cough of child.

Sphaeranthus indicus L. (Asteraceae)

Mundi (M.); Jibontoli (Loc.); Mandal et al 5982.

Paste of herb is applied in itching. Decoction of root is used in bowel complaints. Juice of leaves boiled with candy is used in cough.

Spilanthes paniculata DC. (Asteraceae)

Gusicri, Raipuru (M.); Hernifalls (Loc.); Mandal et al 5972.

Paste of root is applied on swellings. Herb boiled in water is given in dysentery. Pounded herb is used as dressings in wounds.

Syzygium operculatum (Roxb.) Niedenzu (Myrtaceae)

Piaman, Mulh (M.); Budhutoli (Loc.); Mandal et al 4563.

Paste of bark with sugar is taken in case of stomach pain and dysentery.

Tephrosia purpurea (L.) Pers. (Leguminosae)

Bir horhe, Birca Konda (M.); Mandutoli (Loc.); Mandal et al 4591.

Paste of root is taken in urinary trouble and diarrhoea. Leaves are used in jaundice.

Terminalia arjuna Bedd. (Combretaceae)

Asant, Sadaru (M.); Duli (Loc.); Mandal et al 4603.

The decoction of bark is applied in ulcers. Juice of leaves applied in ear-ache. Twigs are also used in ulcers of mouth.

Terminalia bellirica (Gaertn.) Roxb. (Combretaceae)

La Lapung (M.); Jummadag (Loc.); Mandal et al 4583.

Stem-bark is kept inside the mouth to relieve from mumps (infectious parotitis).

Thespesia lampas (Cav.) Dalz. & Gibs. (Malvaceae)

Kasam, Birkadsom (M.); Murulipatra (Loc.); Mandal et al 4602.

Paste of root is taken in the intestinal pain. Paste of seed is applied on the swelling of mouth.

Trichodesma indicum R. Br. (Boraginaceae)

Kaurla, Hent Muria, Kulatirub (M.); Namkum (Loc.); Mandal et al 4434.

Paste of leaves are applied on the swellings. Ash of herbs is applied on the wound. Roots are used in the treatment of fever and dynastery.

Tridax procumbens L. (Asteraceae)

Najum puru, Kulae puduga (M.); Mahuatoli (Loc.); Mandal et al 4410.

Juice of herbs is taken after delivery to gain strength. Juice of leaves is applied in cut-wounds. Plant paste is also applied to boils.

Urena lobata L. (Malvaceae)

Bir-Kasam, Lapetua (M.); Bondu patra (Loc.); Mandal et al 4423.

Decoction of stem is used as a remedy in colic. Paste of roots is given to the person who has taken poison.

Urena sinuata L. (Malvaceae)

Ran-Kapasi (M.); Sarjoma, Morronghada (Loc.); Mandal et al 6003.

Paste of leaves is applied on the swellings. Flowers are used in bronchitis.

Vanda tessellata (Roxb.) G. Don (Orchidaceae)

Amba bandha, Japa (M.); Konrakil (Loc.); Mandal et al 4529.

Paste of plant alongwith the fruits of *Syzygium aromaticum* is used to cure madness. Paste of root is applied in rheumatism and nervous troubles.

Verbena tenuisecta Biq. (Verbenaceae)

Chaur Kande (M.); Dorma (Loc.); Mandal et al 4608.

Juice of plant alongwith asafoetida is applied in dental caries.

Vigna mungo (L.) Hepper (Leguminosae)

Rambora (M.); Jummadag (Loc.); Mandal et al 4574.

Paste of seeds are taken by mother to increase lactation.

Viscum articulatum Burm. f. (Loranthaceae)

Janappa, Bandala (M.); Duli (Loc.); Mandal et al 4605.

Paste of plants is applied in the cuts, in the breast pain and in the pain of knee-joints.

Vitex negundo L. (Verbenaceae)

Hunri, Nirkundi (M.); Kadma (Loc.); Mandal et al 4407.

Juice of leaves is used in cancer. Hot bathing of leaves boiled in water is also taken after fever.

Wrightia arborea (Dennst.) Mabberley (Apocynaceae)

Dharauli (M.); Dewri, Tamar (Loc.); Mandal et al 5063.

Paste of seed is taken in diarrhoea with bhomiting.

Xanthium strumarium L. (Asteraceae)

Venri-latha, Parohanthor (M.); Taimara forest (Loc.); Mandal et al 5096.

Paste of root is applied in the pain of joints.

Zizyphus mauritiana Lamk. (Rhamnaceae)

Kandiari, Singli (M.); Tamar (Loc.); Mandal et al 5025.

Root is used for intestinal pain. Leaves are used in scabies and throat troubles.

Conclusion

Mundas have recently been exposed to new development in medicine and hence their culture and tradition have not changed much. Now because of rapid urbanisation and developments, the areas are changing at a very rapid pace and young Mundas of today are moving away from their traditional practices and customs, hence their traditional system of medicine is at the verge of extinction. So both intensive and extensive step to be taken into consideration to get the overall informations about the useful plants of these areas which are taken into practices by the Mundas. Otherwise their knowledge can not be served to utilize in the present day system of civilization.

REFERENCES

- Choudhury, N. C., 1977, Munda Social Structure, Firma K. L. M. Private Ltd., Calcutta.
- Gupta, S. P., 1981, Native medicinal uses of Plants by the Asurs of Netarhat Plateau (Bihar). *Glimpses of Indian ethnobotany*, p. 218-231; Oxford & IBH Publishing Co, New Delhi.
- Jain, S. K., 1981, *Glimpses of Indian ethnobotany*, Oxford and IBH Publishing Co. New Delhi.
- Jain, S. K. & C. R. Tarafdar, 1970, Santal Medicinal Plants (Revival), *Econ. Bot.* 24 : 241-278.
- Koichi Sugiyama, 1969, A Study of the Mundas village life in India, Tokai University Press, Tokyo, Japan.
- Paul, S. R., 1977, *Journal crude Drug Res.* 15 : 79-97.
- Pal, D. C. & J. N. Srivastava, 1976, Preliminary Notes on Ethnobotany of Singhum District, Bihar, *Bull. Bot. Surv. Ind.* 18 : 247-250.
- Roy, S. C., 1912, The Mundas and their country, Thacker Spink & Co, Calcutta.

Conclusion

Mundras have recently been exposed to a development in methods and hence their content and practice have changed much. New system of rapid without any delay, the new system is changing at a very rapid pace and young students of today are moving away from the traditional practices and customs hence their traditional system of practice is at the verge of extinction. It is an intensive and extensive step to be taken into consideration to get the overall impression about the useful plans of these areas which are taken into practice by the Mundras. Otherwise, the Mundras can not be allowed to follow the present day system of education.

References

Chandrasekhar, V. (1977). Mundras and their content. Ph.D. Thesis, University of Madras.
Gupta, S. (1978). A study of the Mundras in the light of the Vedas. Ph.D. Thesis, University of Madras.
Jain, S. (1978). A study of the Mundras in the light of the Vedas. Ph.D. Thesis, University of Madras.
Kumar, S. (1978). A study of the Mundras in the light of the Vedas. Ph.D. Thesis, University of Madras.
Lal, D. C. (1978). A study of the Mundras in the light of the Vedas. Ph.D. Thesis, University of Madras.
Roy, S. (1978). A study of the Mundras in the light of the Vedas. Ph.D. Thesis, University of Madras.

CONSERVATION OF COMMIPHORA MUKUL L. THROUGH FOLK BELIEFS AND TABOOS – A CASE STUDY IN CENTRAL INDIA.

ASHOK K. JAIN

TRIBALS believe the presence of sacred deities in plants, animals and other components of the nature. Therefore, the felling and cutting of plants is supposed to be a sinful act. The present work pertains to a case study in central India where *Commiphora mukul* could be conserved through folk beliefs and taboos.

Key words : Conservation; Sacred deities; folk beliefs; Central India.

Introduction

India is a land of various religions and cultures where a good number of people believe in sacred deities and their presence in different components of nature, such as soil, water, air, fire, plants and animals. On certain occasions these natural components are worshipped, and thus, considered as sacred as the deities themselves. People's folk beliefs, taboos and faiths thus help in conserving various plants and animals. Various tribal clans take their name after plants and play an important role in conserving these plants (Jain, 1988). The present study is based on an interesting case of conservation of *Commiphora mukul* L. in a tribal village of central India.

Brief Description and Uses

Commiphora mukul L. (Burseraceae) is a shrub and about 1-2 metre high; trunk narrow, branched with a papery bark that exploits in yellowish-white transparent strips.

The gum, obtained from 8-10 years old plants, has a high medicinal importance and used for curing various diseases. In various forms it is used to treat piles and fistula. It is also used in skin diseases and as expectorant. In case of bone fracture the gum is pounded in water alongwith the seeds of *Terminalia chebula*, *T. bellerica*, *Acacia nilotica* and *Emblica officinalis* and then applied as plaster over the fractured part for 15 days. The decoction of gum is taken orally in rheumatism and arthritis. The dry pieces of stem are burnt for pleasant smell. The gum is burnt during certain rituals and especially to worship sacred deities.

Observation

The study area is a small tribal village, named Satipura, situated in Datia district of Gwalior division in Madhya Pradesh. The village is occupied by Sahariya tribals who are dependent on forest products for their day-to-day requirements. A few tribals among their society are experts in herbal drug preparation and treatment of various diseases. People faithfully follow their instructions too. The main deity of Sahariyas is 'Bijasan Mata', the Goddess, whom they worship by offering coconut and flowers.

A 'Chabootara' (earthen platform) is constructed in the centre of the village and symbols of deities are placed over it.

Jain and Das (1986) have reported the occurrence of *Commiphora mukul* at various adjoining areas of the study site. Illicit cutting, uprooting and wrong technique of tapping to obtain gum from its plants have resulted in the destruction of this species from various localities at one time, but the folk belief could help in its survival.

Seeing the destruction of this species a tribal medicine man got worried about this sinful act of the people. At the same time he treated sick people and prescribed the gum of this plant for certain ailments. But he cautioned the people that permanent cure would only be obtained when each individual will cultivate at least 10 plants of the species. Further he warned them, that, if the destruction is continued, more and more people of the village would fall sick because few sacred deities live in its stem part. The local people followed his advice and fortunately some of them got cured too.

Earlier to this, Sahariyas did not believe regarding any sacredness of *Commiphora mukul*. The belief of the presence of deities in the plant was spread by the tribal medicine man just for its conservation. He knew that by creating this belief, the people would not destroy it. At present a good number of plants of this species could be seen around the village. The people have started worshipping the plants.

Discussion

The faith of man in the conservation of plants and other biological resources has led to the survival of many areas on this earth (Jain, 1986). In many parts of India sacred groves consist of plenty of plants including rare ones (Vartak and Gadgil, 1981). Unfortunately, exploitation of natural resources is continually going on to meet the man's ever expanding necessities. In the present study conservation and protection of an important species through beliefs and taboos has been certainly a success. Such traditions could play a great role in maintaining the balance of the ecosystem.

REFERENCES

- Jain, A. K. and Das, R. R. 1986. *Commiphora mukul* Linn. (Burseraceae) from Chambal ravines – A new record for Madhya Pradesh. Geobios new Reports, 5 : 79-80
- Jain, A. K. 1988. Tribal Clans in Central India and their role in conservation. J. Environ. Conserv., Vol. 15, No. 1, pp. 368.
- Jain, S. K. 1986. Ethnobotany. Interdis. Sci. Rev., Vol. 11, No. 3, 285-292.
- Vartak, V. D. and Gadgil, M. 1981. Studies on Sacred Groves along the Western Ghats from Maharashtra and Goa : Role of Beliefs and Folklores. In Glimpses of Indian Ethnobotany (Ed. S. K. Jain) pp. 272-278. Oxford & IBH Pub. New Delhi.

ROLE OF MUSEUMS IN THE CHANGING WORLD (MUSEUM AND ENVIRONMENT)

R. K. KACKER

TRADITIONALLY the museum have focused on the collections, preservation, exhibition, research and interpretation of our collective heritage of present and future generation. As a matter of reality the very nature of what constitutes a museum is gradually evolving as the levels of education rise and people's look for increased understanding of their culture, heritage: the society itself is changing. Is it possible to define the museum's responsibilities in relation to society? Where do we begin and where do we end? If so then what should they be?

Indeed the museum, without harming to the scholarly and custodial responsibility, should open out towards broader community and help in eliminating physical and intellectual barriers. It should present the opinions on divergent point of views.

There are certain basic questions that arise in our mind. Do we have institutions which will respond to changes? What we are learning from traditional and alternative institutions? There must be some sort of rethinking exercise to the fundamental questions of traditions and alternatives.

The growing need from public, either private or otherwise, impinge on museum's ability. As a result of this pressure of new audiences which bring with them increased financial resources; there is a fair chance of being too much consumer oriented. This frame of orientation will pose so many questions such as :

- (A) Are museums portraying true reflection of our pluralistic culture?
- (B) How are museums dealing with the facts of races, class, gender etc.?
- (C) Whose culture is being represented by whom and how?
- (D) How can museum increase our knowledge and understanding of cultural diversity? How can we achieve a compromise between communication and education? Is that the requirement of museologist?
- (E) How can the museum cope with the radical changes in their public learning pattern which are formed by media, television and radio.

These were some of the issues which were raised at the 16th General Conference at Quebec City, Canada from 19-26 September, 1992 under the auspices of International Council of Museums, on the theme "Museum : Rethinking the boundaries".

Our concern at present evolves around the museums engaged in Natural History either comprehensively or partially.

National heritage and living collections

As given in the definitions "Museum" which includes, in additions to museums designated as such, (. . . .) institutions holding collections of and displaying live specimens of plants and animals such as botanical and zoological gardens, aquaria, vivaria (. . . .) natural reserves etc.

In 1986, General Assembly (ICOM) at Buenos Aires launched an alarm in 3rd Resolution concerning "the grave and immediate threat to great proportions of the planet's natural Heritage".

Due to increasing urbanisation, men's contact with the nature are diminishing gradually. Expansion of his domain is effecting the entire planet and causing upheavals and effecting animals and plants and the environment. This has directly or indirectly caused environmental degradation with the result we lost many plants and animal species. The importance of this biological diversity has been emphasised and has been the subject of recently concluded "Earth Summit" at Rio de Janeiro. Many programmes are underway under various organisations UNEP (United Nations Environment Programme), UNESCO (Man & Biosphere Reserve), IUCN and WWF.

It is well known to us that Biosphere functions like "self regulator" and therefore all the elements of biosphere are indispensable. Species are a part of the common heritage and man is a guardian of all the common heritage and nature's resources. He is responsible for preserving them for the posterity. If an environment is lost, then many species are threatened; a species, that disappears, is a source of genetic information and that is lost for ever.

Nature, fauna and flora are all source of knowledge and object of research and aptly quality to be preserved. Object kept in natural history museums are precious inanimate witness. But nature and life, ecosystems, flora and fauna also to be equated as pieces in reserve. National parks, Biosphere reserves, National conservatories, Sanctuaries, Zoological parks, Botanical gardens aquarium, Vivaria etc. may not entirely save the extinction of species, but certainly be able to conserve and maintain the gene pool, source of scientific knowledge and to some extent reproduction in captivity, sources of public information and spiritual enjoyment. The kind of techniques adopted by the curators in exhibitions have to be utilised in a similar way. Curators have their own professionalism which can be inducted in educational and paedagogical fields compared to classical museums.

Zoos, Aquaria, Parks are the true museums and present live collections; the repository of certain species threatend with extinctions, the general heritage of mankind.

Exhibitions contribute greatly in taking the whole subject matter concerning the specified theme to the public. An exhibition at the National History Museum, on the specific theme "NEW ECOLOGY" could be arranged with following object in mind.

1. To appeal to non-specialist visitor, who wishes to know more about scientific background to environmental aspects.
2. To introduce ecology and give an overview of its basic concept.
3. To emphasise that man needs to understand the ecological processes in order to regulate the man's impact on nature.

The exhibitions are never comprehensive but revolve around recurring themes, relationship between animals, plants, inorganic environment, diversity and complexity; the dynamic state of ecosystems, mankind as an integral part of the natural world. Mobile or travelling exhibitions on crucial themes could be another way in popularising the museum. The themes could be "The great Himalayas", or "Indian Forests" etc. On the regional basis themes could be selected for greater awareness and need for people at large. To highlight the role of museums in changing world, the international body of museums — ICOM had organised "International Museum Day" on 18th May 1992, at Quebec, Canada, on the theme of "Museum and Environment". Promoted by ICOM, 85 countries participated to put their effort in designing to increase interest and awareness of museum's role in society.

Museums and Environment

In the changing world scenario one has to look afresh in the relationship between museum and environment. Environment has now occupied a central place in political, economic and social affairs of most countries, and there can be no doubt, these environmental matter will continue to play an important role in our lives for unforeseeable future. The matter has been attracting the attention of United Nations and many conference on "Environment & Development" have taken place.

Consequently the relationship between museum and environment has to be a matter of concern to all professional museum workers. Ironically in our country no serious efforts are visible. How one can claim to be an institution or museum if they have nothing to say about central concern of society? There are certain important aspects of the relationship between museum and the environment which may require consideration.

Impact of Museum on Environment

Every museum has some impact on the environment in which it is situated. Like any other enterprises the museums consume resources and produce waste, and in all likelihood these have some environmental consequences. There it is very essential that the managers of the museum should have Environmental audit covering aspects of energy consumption, recycling of material, generation and disposal of waste (like paper, polybags, tins, plastics etc.), perhaps museum should play their role in this regard and design their guidelines.

Another aspect which is not visible in small locality but to some extent prominent in the metropolitan cities, is the impact of location of museum on the neighbourhood. We may consider museum being benign institution, nevertheless, it has impact on the residential locality— for the noise, traffic, kerbside parking.

Museums, botanical gardens, zoos, herbaria, which depend on collection of flora and fauna have special responsibility to ensure that their activities do not lead to any danger to the extinction of species. In all likelihood this has never happened in the past but over enthusiasm of the conservationist raise hue and cry that over-collection may cause species depletion.

The question whether museum scientists should collect specimens of endangered species still poses dilemma. On one hand, the species need to be studied in order to know its means, behaviour, biology

and ensure its survival and on the other hand, even removal of single species from the natural set-up may lead to the start of the process of extinction.

Whatever may be the outcome of dilemma, museum as an institution of research have to be extremely careful in collecting fauna and flora and comply with the laws governing export and wildlife, enacted for conserving nature.

Museums of art, archaeology, history, science & technology may not face these problems but they have significant role on social environment specially if the people who collect the material, work with tribals who live in a non-technological way of lifestyle due to want of money and maintainable equipments. It can have a devastating effect in breaking down the community system and social value.

In short, the museum managers are to be conscious of their responsibility towards the environment both natural and social. Museum sets an example as an environmentally friendly corporate citizen.

Impact of environment on museum building and collections

Every museum is likely, sooner or later, to be effected by a range of environmental factors, to its collection and building, specially stone work and painted surface by city air pollution. There is nothing that museum authorities can do any thing about this. This is entirely the matter in the hands of the government and the community. But museum can make efforts to ensure that by displaying, the damage versus cost of repair, make people aware of their responsibility.

More seriously, the collections itself begin to suffer damage by the polluted air. The collection in an air conditioned storage area is comparatively more safe and less prone to damaging than out side. The problem is more serious for the collection of natural history, they suffer damage from a kind of "acid rain", heat, moisture, various climatic factors and pest infection.

Much more problems are the consequences of global warming. Although no precise estimate can be made regionwise, nevertheless the climate control measure could be employed to offset the imminent effect of this change. There are instances that tropical storms have damaged the museum such as northern territory museum of art gallery in Darwin, Australia, which was literally blown off in Dec. 1974 in a tropical cyclone.

Yet, another aspect of global warming is likely to be the rise in sea level. The cities and town at low lying coastal region and small islands such as South Pacific, Indian Ocean, Caribbean Sea. Even most likely the cities like Alexandria and Venice may be flooded. Museum located in such a vulnerable area should plan to re-allocate to the alternative sites. Problem of water pollution and toxic waste disposal will also effect the museum only indirectly. There may be another major factor such as war, which is thought in relation to the environment. Recent events in the gulf war have shown the impact on environment. During these circumstances museums and their collections are most vulnerable to catastrophe. Measure can be taken to prevent war related damages as recommended in the convention for the protection of cultural property in the event of armed conflict (the Hague Convention 1954). Nothing is there for the museums to do except to have a safe place to prevent disaster to the collection and ensure that the country is party to the convention.

Role of Museum in increasing understanding : Relationship between People and Environmental problem facing mankind

Most of us believe that problem of air pollution, seas, freshwaters, extinction of species, destruction of wildlife are the main environmental problems. But museum certainly can help in helping people in understanding the nature of such problem facing the mankind and can help us in countering the process of environmental degradation. As a matter of fact the problems are of much broaderbased since 80% of the people live in the developing world. In the report of UN conference on environment under the heading "Environment" where in introductory section some environmental problems are identified. The problems are due to First world's affluence and third world poverty. They include :

1. Atmospheric pollution (Acid rain, Smog, Atmospheric lead).
2. Use of chlorofluorocarbons and ozone depletion.
3. Climatic change due to CO_2 emission from energy use, also from CFC's, methane and water vapour.
4. Over exploitation of marine resources, deteriorating of water quality, salinizations, eutrophication.
5. Soil erosion and land degradation, spread of desert.
6. Loss of vegetation due to deforestation and other transformation of natural plant communities.
7. Loss of biological diversities, genetic variability, extinction of species, diminution or disappearance of ecosystem.
8. Natural hazards such as cyclones, floods, drought, earthquakes, volcanos and forest fire.

Next cluster of chapter deals with human activities which are inherent in the poor nation's developing economies to eliminate grinding poverty. They include:

1. Harvesting of living renewable resource especially through agriculture, forestry and fisheries.
2. Industry in its manifestation-mining and manufacturing.
3. Production and distribution of energy in all its forms.
4. Waste production treatment and disposal.
5. Transport and transport infrastructure.
6. Tourism and tourism infrastructure.

All these activities have some effect on the quality of environment where museum can educate people to minimise its effect which people find to recognise thinking them as an improvement in their living standard.

Another aspect deals with the human well-being which is in one way or the other related to the environment.

1. Population and relationship between number of people, their consumption of resources, quality of living environment.
2. Health and diseases.
3. Human settlements, habitation which has overriding determinant of the quality of their life.
4. War with all its effect on human natural environment.

All these outline provide wealth of subject for museum display and exhibition but the question remains how to address this problem? Should museum become spokesman for environment against the polluting industry which pollute the environment and also contribute to the nation as well as to the museum? The museum is supposed to present a balanced view, it should frequently illustrate two positions. Absolutely in non political way of presentation. There is a need for committed professionally trained museum personals or managers to put quasi-political view on the environment.

Natural History Museums have special responsibilities because the most important elements of environment, the people value, are the animals and plants. Not only they can help people to understand the amazing diversity of life that had been on the planet but also educate how it has been lost. Likewise these museum can involve school, colleges and universities in awareness and conservation through well thought out displays.

Scientific museums in the west have tended to concentrate their display on scientific principals. In most cases they have direct application in human affairs. In contrast the developing countries have long recognised their potential to contribute to the knowledge base which is essential for their national development. They devise their programmes which seek to help citizen to understand the way in which science can be applied "in the service of society and its development" including, of course, the understanding of science dealing with environment.

ICOM Resolutions dealing with aspect of the environment

Resolution are identified by first, the member of General Assembly at which they were adopted, second the number in the series of Resolution adopted at the Assembly.

1/13 (Maxico City, 1947) "National Park and Nature Reserves"

4/12 (Milan, 1953) "The Protection of Nature"

5/3 (Geneva, 1956) "Museum of Natural History"

6/5 (Stockholm, 1959) "Role of Natural History Museum in Protecting Nature"

10/5 (Grenoble, 1971) "Museums and Environment"

15/3 (Beunos Aires, 1986) "The Threat to our Natural Heritage"

REFERENCES

- Stephen E. Weil, 1990. Rethinking the museum and other meditation. pp. 95-103. Smithsonian Institution Press, Washington, D.C.
- Bagchi, S. K. 1986. Science museums and social relevance – an Indian experiment. Museums, 150 : pp. 106-107.
- Bulletin of the International Council of Museums, ICOM NEWS.

A ZOOLOGIST WHO POPULARISED MUSEUM GALLERIES

D. K. MITTRA

THE book "The Indian Museum 1814-1914"¹ mentions below a reference about Rai Bahadur Ram Bramha Sanyal :—

"Here we may mention an interesting little book, the late Rai Bahadur R.B. Sanyal's '*Hours with Nature*' (Calcutta : 1896), in which considerable space is devoted to a tour of the zoological galleries of the Museum described in a dialogue between a pupil and his teacher somewhat after the style of "Sandford and Merton", but with an originality and quaintness of its own. The book is of course in no sense official."

It may be mentioned here that Sanyal was then an employee of the Calcutta Zoological Garden and was working as Superintendent² of the Garden. The above mentioned book was his second publication³ and was meant for school students. It was a book written in a simple language so that the interest for nature may be created among children. This became possible for him because, he was contributing such articles for the last ten years in two Bengali magazines⁴ and each article was an attraction to those young boys and girls.

The description regarding the Indian Museum's Zoological gallery is so vivid that it is obvious to conclude that the author must have visited this institution a number of times to reach a perfection. Thus it can approximately be taken at least a year earlier than the publication and gives an indication of the first contact of Sanyal with this institution. As a matter of fact Sanyal's contact was as early as 1877. The reason is that, firstly he was serving then Calcutta Zoological Garden (Alipur Zoological Garden) as an "Head Babu" under the supervision of a Managing Committee whose member was Dr. John Anderson, Superintendent, Indian Museum. Secondly, he was guided generally by Dr. Anderson in his day to day work at the Garden.

One such activity was to send the dead mammals to Indian Museum's Zoological Gallery. The earliest mention to this work which Dr. Anderson has recorded in his book⁵ goes back to 17th March 1877 when '*Macacus nemestrinus*'— an adult male was presented by the Zoological Gardens to the Indian Museum. This practice was in force at least upto 26th June, 1880, when an young male "*Hylobates Syndactylus*" was sent from Zoological Gardens to the Indian Museum.

Sanyal continued his connection with this institution for his official work and in order to understand this, we have to focus our attention to his working place, rather a field based laboratory. Sanyal as 'Head Babu' (September 1876) has gradually been promoted to the post of Head Assistant (Officer-in-charge) in April 1878 and then to the post of Superintendent of the Garden. With the change of Sanyal's designation followed by the promotion during these years, the volume, variety of his duties also changed.

By the August of 1876, the collection of the Zoo at Barrackpore were being shifted to the newly laid gardens and naturally, the work-load of Sanyal also increased. From January 1877, the Committee felt that as the collection of the garden was fairly large, regular observation had to be kept for future reference and as such they decided that a 'Daily Register' containing such observations should be

maintained for mammals, birds and reptiles. The Committee members entrusted this work to Sanyal, which was of technical nature. Being an ordinary worker it was not expected to be done by him with perfection. Thus Carl Lewis Schwendler and Dr. John Anderson helped Sanyal in doing this work. Later on Dr. D. D. Cunningham also helped him in this endeavour.

The years rolled on and Sanyal besides his multifarious duties within and outside the Garden, went on writing his 'Daily Register'. This daily incorporated information about the zoo-inmates included notes on behavioural pattern, food habit of the animals for which he went round the large garden area (156 bighas or slightly more) at least three times a day. On completion of preparation of the 'Daily Register', the Honorary Secretary of the Committee requested Sanyal to write a series of articles in English on the basis of his daily observations.

The work was accordingly planned and taken in hand by August 1886. While the work was in progress a new Lieutenant Governor Sir Stuart Colvin Bayley (2nd April 1887-Dec. 1890) arrived. In the Resolution of the Government of Bengal on the Report of the Committee for the Management of the Calcutta Zoological Gardens for the years 1888-89, Sir Bayley suggested ⁶ that "from the records of the Committee and the recollections of their able Superintendent, it would be possible for them to produce a hand-book which might be of great use to the numerous nobles and other persons who on a smaller scale keep collections of animals or birds in captivity."

This resulted an abrupt change in the form of writing by Sanyal which required in depth information about the names of species, general health, food, treatment of their diseases etc. The work was taken up on top priority and by March 1892, Sanyal's first book "Handbook of the Management of Animals in captivity in Lower Bengal" was published. Soon the appreciation came from the new Lieutenant Governor of Bengal, Sir Alfred Charles Eliot, W.T. Blanford, Vice-President, Zoological Society, London, Dr. John Anderson, and C.T. Buckland. The 'Nature' ⁷ magazine from London reviewed the book and praised highly his work. In recognition of Sanyal's contribution towards the advancement of zoological knowledge in India, the Zoological Society, London, honoured him by electing one of its "Corresponding Members" in 1892. With his gradual accomplishments, the Viceroy and Governor General of India honoured him by the title of Rai Bahadur on 1st January, 1899. ⁸

The handbook is divided into two parts dealing respectively with 241 of the "Mammalia" and 402 of the class aves, arranged according to their orders, sub-orders, families, sub-families and genera etc. The book is of 351 pages with a general preface including the Author's Preface. In his preface the author has clearly acknowledged and expressed his obligations to two personalities, of which W. L. Sclater, Deputy Superintendent (Nov. 1887-May 1892) Indian Museum is one of them. The author was allowed by the Deputy Superintendent for the access to the collection of skins in the possession of the Indian Museum and also for his general advice and assistance. Sir Eliot desired that the Superintendent of the Garden should be directed to continue his observations of scientific facts and his notes on the habits of animals which must continually come to his notice, for possible production of future edition as greater experience is acquired.

Till 1908, no future edition of the book was published. After a lapse of hundred years this book has been reprinted ⁹ and today, the name and fame of Sanyal which travelled far and wide then, is still remembered as a 'zoo-biologist' and with this work, Indian Museum comes prominently which played

its role to help thus unknown Indian scientist of the 19th century. Taking into consideration of the time, situation and availability of resources under which Sanyal worked and gained status, it can be said that this Bengali scientist achieved a unique position unparalleled in the history of science in India. Superintendent Sanyal was at the top of the Indian scene for 1876 to 1908 and during his time, only a few selected and aspiring persons in India could think of having science as their only pursuit of knowledge.

The Calcutta Zoological Garden now at present Alipur Zoological Garden still exists with its zoo-immates and for their welfare a large number of employees are working, with its top by a Committee and its few members. No effort has been made by the zoo-authorities to perpetuate the memory of Rai Bahadur Ram Bramha Sanyal, the first Indian Superintendent of the Garden.

REFERNECES

1. *The Indian Museum : 1814-1714*. The Trustees of the Indian Museum, Calcutta, 1914, p. 132.
2. Joined Calcutta Zoological Garden on 24th January, 1876 and gradually rose upto the post of Superintendent by April, 1881.
3. *Sanyal, Ram Bramha, C. M. Z. S., S. K. Lahiri & Co.* Calcutta 1896. The book is of 168 pages and consists of ten chapters of which chapter-VI : *Round the Indian Museum*, covers thirty six pages.
4. *Sakha* and *Mukul*, Bengali monthly magazines published from Calcutta. Sanyal contributed to *Sakha* from 1887-1890 to *Mukul* from 1895-1900.
5. Anderson, John, *Catalogue of Mammalia in the Indian Museum* part-I. Calcutta. 1881. p. 74.
6. *Calcutta Gazette, Appendix and Supplement*, July-December, 1899. Resolution on the Report of the Committee for the Management of the Calcutta Zoological Gardens for the years 1888-89. Revenue Department. MISC. F. Darjeeling 5th October, 1899. pp. 1905-1906.
7. *Nature*, London. 46 : 1188. 4th August 1892, p. 314.
8. *The Gazette of India, Extraordinary*. Calcutta, 2nd January 1899, p.6. Item No. 7.
9. The book has been published by the Central Zoo Authority, New Delhi 1995 with a foreward, introduction and a short bio-graphical note.

THE PROBLEMS OF TECHNICAL DISPLAY IN THE NATIONAL MUSEUM OF BANGLADESH

MD. LUTFUL HYE JAMI

THE idea "museum" has changed greatly everywhere in recent years. No longer a passive place for sheltering collections, the contemporary museum has become an active instrument of society in education most directly, but in broader cultural terms, it offers something for every age and category of the population.

Museum's services have changed, so has its form. The fundamental obligations of making collections, preserving and studying them, thus contributing to knowledge and providing scholars with research material, continue. For the public, however, it is the exhibitions that are emphasized in the museum of today in Bangladesh. They are the major present "instruments" of museum service.

The distinctive function of the museum is to use the original object to provide instruction and enjoyment. Making the object "Speak for itself" is, therefore, the aim of contemporary museums' technical theory and practice. Older museums sometimes have difficulty in changing to the new programme. They carry a heavy load of large collections, of crowded exhibition galleries, and of long, firmly established habits in both staff and public, circumstances not easy to change quickly. A newly founded museum like the National Museum at Dhaka, has therefore, an advantage. It has no long tradition of the past to undo. Indeed, in this case it may be said that its pattern was set for it in the new direction from its beginning, in 1913, for it was first of all an exhibition, and it remained for long an exhibition. Only when the National Museum's permanent building was inaugurated in 1983, were the traditional functions of a great museum added, behind the gallery scenes, to its exhibition programme.

The National Museum, Dhaka, has had to adapt the physical setting of its new building to its technical requirements as an active contemporary museum. When considered purely from the functional point of view this building serves quite well museum purposes. It can be treated as a shell in which exhibition areas and exhibition devices can be introduced, where required to make a report on Indian Art coherent and clear. The lighting provided was of all-purpose type. It is being modified for special needs. The entrance lobby of the building, lofty, cool and airy in the hot weather, well lighted and sun warmed in winter, provides seats for resting or waiting. An inquiry and sales counter and display windows for publications are convenient. At right and left are two indispensable facilities of a modern museum : the auditorium for lectures, motion pictures, and cultural programmes; the library for research of the staff in the third floor.

The exhibitions galleries lend themselves to an orderly unrolling of art periods and styles. They provide on all floors a series of large connecting halls, readily adaptable to presentation requirements according to varying types of materials.

How to organize superb examples of Indian art and artifacts of the National Museum's collections, representing as they do such variety in size and type and so vast a panorama in time and diversity of styles, is the first question. Some Coherence, some idea of relationships has to be given. Devices

for assuring to the small scale objects the command of space, and therefore the attention their importance requires, which the monumental sculptures achieve without effort, has to be found. For early periods particularly, the relatively few examples often represent an extreme range of sizes, styles and material. To achieve unity and to assure appropriate attention to each is one problem. Placing collections on exhibition in a way to allow relation ship to be traced easily, and organizing the material within collections in an effective way for study purposes, as well as visual effect, are among the other requirements of exhibiting such varied material.

By following a few general principles the National Museum seeks to give a logical and significant order to the long tradition and infinite variety of the material exhibited. They can be summarized : rigid selection on the basis of quality whatever the object; provision of sufficient space and of controlled space to assure to every object the full opportunity of making its own impression; orderly and logical arrangement, according to chronology, materials, technique, style and provenance, in whatever combinations the objects require, in order to convey clearly their own significance and their relation to other objects or classes of objects, on exhibition. Subject matter or iconography, sometimes used as a basis of exhibition order, and often valid in a more restricted context, is inadequate in so large a field as the National Museum covers and for the local, national and international public it serves. It gives place to broader considerations of chronology and style. Arrangement according to chronology is valuable whenever the type of material covers a long span of time. In the National Museum the sculpture in galleries is installed chronologically with styles or schools forming subdivisions within each period.

The reasonably successful application of these general principles, with careful attention to detail, explains what ever success the National Museum's exhibitions can claim as examples of contemporary museum technique. Details are important, for example, appropriate colours and textures for backgrounds, made easier for cases by use of the lovely inexpensive handwoven textiles of Bangladesh establish a mood as well as mark off relations and differences. Perhaps a few concrete illustrations of specific exhibition problems and of how they have been solved in the National Museum will save better than generalities to make clear some of the pertinent points in this regard.

On all floors, the methods of exhibition are adopted to the pieces shown. Unity is sought within each gallery, but the galleries differ greatly from one another, because of the varied requirements in scale, lighting and manner of exhibition of the respective collections. For example, textiles and most decorative art objects must have cases and should be shielded from daylight, while architectural wood carvings need no such protection. Variations, dictated by considerations of safety as well as visual effectiveness, have the additional useful result : they prevent monotony.

Ideally, all material exhibited should be in the open in museum halls, so that the contact of the viewer is immediate and direct without any barrier, even a transparent one. Practically, of course, except for sculptures of some size, and the occasional temporary exhibition for which extra guarding can be assured and exposure to dust is not unduly prolonged, such open exhibition is not feasible. After all, the Museum's first obligation is protection and preservation of its collections. Glass covering is therefore necessary for paintings in frames and for other objects in one or another type of case.

The shortcomings of cases can be minimised to some degree by sufficiently large cases, by cases that have a light-appearing framework, by cases that are unobtrusively part of the structural setting.

Internal lighting tends to eliminate reflections and can serve to draw the spectator into the case as well as direct attention to the object.

Labelling is important; well used, it provides guidance according to visitor. As far as possible in the National Museum, the pieces are made to speak for themselves. The indispensable individual labelling is discreetly placed. Introductory labelling, with its text, charts, maps, photographs, according to requirements, provides a framework of reference and is disposed at the entrance of galleries, well apart from the exhibited material. Thus the rivalry of the printed word and the object's own message is minimised, yet a well documented framework of information is at hand for those desiring it.

Gradually, as the spaces can be thoroughly studied and definitive installations worked out, the all purpose lighting of the National Museum is being modified to provide the illumination appropriate to each area. The fluorescent tubes in the cases and for reflected all-over lighting in the galleries, safe for textiles, paintings and manuscripts, give way to other lighting methods for some objects. For many, natural light is best, provided they suffer no deterioration from it. Those depending on three-dimensional effect-sculpture, for example, especially monumental sculpture suffer from general lighting and need either natural light or a definite and focussed light source, whether a spotlight or incandescent bulb, to define, with shadows, the planes creating the volumes and plastic values of the piece.

A number of the National Museum's galleries presenting unusual problems of installation were long under study while the more obviously conventional exhibitions were being brought to final form. They required special apparatus, or longawaited materials, or unusual provision of some kind for safety of the material, or for effective use by public and scholars, according to needs in Bangladesh. As elsewhere in the National Museum, Bangladeshi products and Bangladeshi means to satisfy Bangladeshi requirements have been employed.

The most important galleries to receive definite arrangement during the past years are those of manuscripts, arms, jewellery and coins. The fact that so much time was required for their planning, and still longer for their execution, indicates, not only that installation done with technical care for security and for maximum possibilities of giving pleasure and instruction takes much thought on the part of a team of museum experts, but even more importantly that there are no formulae universally applicable. Each type of material has its own requirement. Not only do these have to be understood and respected, but also attention must be given to trying to make every new gallery an addition to the whole, avoiding competition with one another eliminating monotony, and by contrast and continuities to try to make each gallery enhance the visual effect of its neighbours.

Obviously when a museum is not as crowded for space as the National Museum is, in the new building, the problems of juxtapositions are not so dominating. Taste and ingenuity must be called on the maximum therefore, in order to preserve the high level of exhibition of its varied possessions that it has already set. The ways of achieving the purposes of exhibitions in their broadest objectives of giving instruction and pleasure, depends on the study of the collections, with all their exhibition requirements of aesthetic appeal, of historical iconographic and other significance, and of safety, as well as on understanding the public that they are designed to serve. Not less insistent, though not, of course, so evident to the visitor or even to the scholar who uses the Museum, are the demands for safe storage which, in a part of a building intended primarily for exhibition galleries, must to some extent encroach on the galleries. These too have been met to some extent. Details of arrangement and re-arrangement, the replacement of one good piece, by a better one, the addition of an example to fill

in a gap, or to enrich the survey of a technique, a school, a type, a period, a material, are likely to continue indefinitely.

The National Museum of Bangladesh therefore will remain a museum in evolution. This state of evolution and transformation is a healthy, active state for a museum in the contemporary world- a state which the changing exhibition gallery will always emphasize. Staff members should never be able to say : "The National Museum is finished" nor should its public ever be able to counter an invitation to go to the museum with "Oh, I have seen the National Museum". There will always be something new there; always what is there will have something new to say.

A very attractive and modern method of displaying numerous small isolated objects such as wood carvings, miniature images, pieces of antique jewellery and similar subjects has been devised by the Indian Museums. Bright objects such as jewellery and gems show up better against an interior lined with black, maroon or dark green velvet. Shelves are dispensed with altogether as they are cumbersome and interfere with the uniform illumination of the case, the objects being attached directly to the background panel in most cases, or placed on neat, cubical or rectangular mounting blocks.

One of the greatest advances in the field of display in modern museums is the introduction of motion into some of the exhibits which lend themselves most favourably to such a device. Naturally a moving exhibit arouses far greater interest in the visitor than a stationary one. In these museums, a large number of interesting scientific phenomena are tangibly demonstrated by means of moving models which can be electrically operated at will by the visitors themselves. The educational value of these exhibits is thus considerably enhanced, as hard scientific facts are communicated to an untrained audience by direct visual means.

No museum in a country attempting to modernise its galleries should be without the aid of artificial illumination. The great advantage of electric lighting is that it can be controlled according to the effect desired, and at the same time it makes it possible to do away with the excessive glare of natural light in the museum galleries. The cool and restful effect on the eyes of the visitors viewing the exhibits which are illuminated by concealed lights carefully screened off from the eyes, in a spacious semi-darkened gallery can scarcely be overestimated. It is interesting to note that all the great habitat groups in a gallery are not illuminated uniformly; the lighting is varied according to the nature of the scene depicted. For example in a scene portraying sunset, the general lighting of the group is greatly subdued but a specially strong ray of light is directed towards the glowing crimson painted picture of the setting sun over the hills in the background; and where a moon-light scene is intended, fluorescent lights shaded by blue and green produce a remarkably pleasing effect.

Many of the up-to-date Modern Museums particularly European or American owe a large measure of their attractiveness to the splendid colour schemes which they adopt in the interior decoration of their galleries. It is customary to select a distinctive colour scheme for each of the galleries in a museum, each different from the rest, so that the visitor, in passing from one gallery to the next, might experience a welcome change in the colour of his environment. Such a device, the National Museum of Bangladesh should introduce, minimises museum fatigue considerably and sustains the interest of the visitor throughout his tour through the various galleries.

AN EXERCISE BEHIND THE SCENE RE-ORIENTATION OF RESERVE COLLECTION

CHHANDA MUKHERJEE

ANASUA SENGUPTA

COLLECTION is the backbone of any museum. All indoor and outdoor activities, research, publications, seminars etc. depend on its collection. A good museum does not display all its collection but it keeps a major part in reserve and only a fragment of it is put on show. The old and large museums like the Indian Museum, Calcutta, house a huge collection and more than 80% remains in reserve.

Since the storage is not accessible to the general visitors and is seldom visited by scholars it often remains neglected. This was also the case with the Indian Museum. Efforts made in reorientation of reserve collection remain an exercise behind the scene and the visitors are generally not concerned with it, however, important herculean task it may be.

The concept of museum has now changed and it is felt that its reserve collection needs as tender care as the objects on display. A good museum now aims at converting the reserve collection or storage into a well organised study collection. In conformity with this new approach has been taken up the work of re-organization of the Reserve Collection in the Cellar Godown of the Indian Museum, which is justly regarded as a great treasure and one of the most valuable sources for the reconstruction of our past but which lay huddled together haphazardly for years. As a matter of fact, the idea of re-organization and scientific arrangement of these valuable antiquities preserved in the Cellar Godown occupied our minds for quite sometime. Finally, in 1986 when a scheme of overall improvement of the Museum was undertaken, the re-organization of the Cellar Godown was also included in it.

The process of re-organization underwent a few phases. In the first phase of the programme cleaning of all the antiquities by plain water took place so as to remove dust particles gathering on these. In the second stage, chemical treatment as also mending of the antiquities, where necessary

The shelves as well as the floors of the rooms where the antiquities are kept, required to be elevated for arranging them properly. This was now done. In the next stage attention was given to the problem of inadequate lighting arrangement and worn out wiring system which so long remained one of the biggest obstacles and prevented easy access to the Cellar Godown. These deficiencies were next rectified. Electrical wiring was done afresh and proper lighting arrangement made. Finally, attention was given to roomwise thematic display of the antiquities.

The small space at the entrance of the godown has been provided for the inscriptions of different ages. Room No.1 contains Brahmanical antiquities; Room No.2 and contain Buddhist antiquities. Again, in all these rooms male and female deities have been arranged separately and Room No.5 contains miscellaneous objects like pillars, lintels and fragments of sculptures. Because of shortage of space the antiquities in this room could not be arranged systematically. The steel racks were provided in all these rooms for small objects which are placed on foam or thermocol to avoid scratches and rubbings. They are also covered by Polythene sheets so that dust may not affect them. Again iron angled decks have been provided in room nos.1 and 4 for systematic arrangement of Brahmanical, Buddhist and Jain sculptures. The reorganization was completed by mid 1987. The accompanying plates will provide *ogrosso modo* an idea of room wise arrangement of the antiquities.

Scholars like Dr. G. V. Mitterwallner of Munich University, West Germany, Dr. Janice Leoshke of Los Angeles County Museum of Art, California and Mr. Wladimir Twalf of British Museum, London, who visited the Cellar Godown for purposes of study after completion of these works have expressed their satisfaction at the scientific and proper arrangement of the antiquities. Dr. Janice Lacshke in her letter dated observed "sculptures which had been inaccessible could now be studied because storage facilities had been much improved. The reallocation and reorganisation of the reserve collection of the Indian Museum is no small feat."

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The small space at the entrance of the Godown has been provided for the inscriptions of different ages. Room No.1 contains a few Jaina and Brahmanical sculptures; Room No.2 contains Brahmanical antiquities; Room No.2 and contain Buddhist antiquities. Again, in all these rooms male and female deities have been arranged separately and Room No.5 contains miscellaneous objects like pillars, lintels and fragments of sculptures. Because of shortage of space the antiquities in this room could not be arranged systematically. The steel racks were provided in all these rooms for small objects. Which are placed on foam or thermocol to avoid scratches and subrings. These are also covered by Polythene sheets so that the dust may not affect them. Again iron angled decks have been provided in room nos.1 and 4 for systematic arrangement of Brahmanical, Buddhist and Jaina sculptures. The reorganization was completed by mid 1987. The accompanying plates will provide *grosso modo* an idea of room wise arrangement of the antiquities.

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To make the Reserve Collection in the Cellar Godown more congenial for study and scholarly work certain things are yet to be done. Shortage of space prevents us from arranging the antiquities properly in Room No. 5. Possible solution either by way of expansion of the godown or by finding alternative accommodation may be probed. Again, because the low ceiling the rooms of the godown become too stuffy. Exhaust fans should, therefore, be provided for proper ventilation and healthy atmosphere. Again, the road-side window should be covered so that the valuable sculptures may remain unaffected from dust and dirt.

The problem of water logging also had not been resolved, but authorities are aware of its gravity and we can only hope that a way out would soon be found.

The conversion of antiquarian stores into the study collection has to be an ongoing process for years to come and it has to be given due priority. This will not only facilitate the researches but also the Museum staff in periodical checking, verification, temporary exhibitions, publication and exchange.

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Fig. I. Gaṇeśa, Mathura



Fig. II. Gaṇeśa, Mathura

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Fig. III. Gaṇeśa, Mathura



Fig. IV. Śiva Pārvati, Mathura



Fig. V. Hara-Gaurī and Vishnu, Mathura

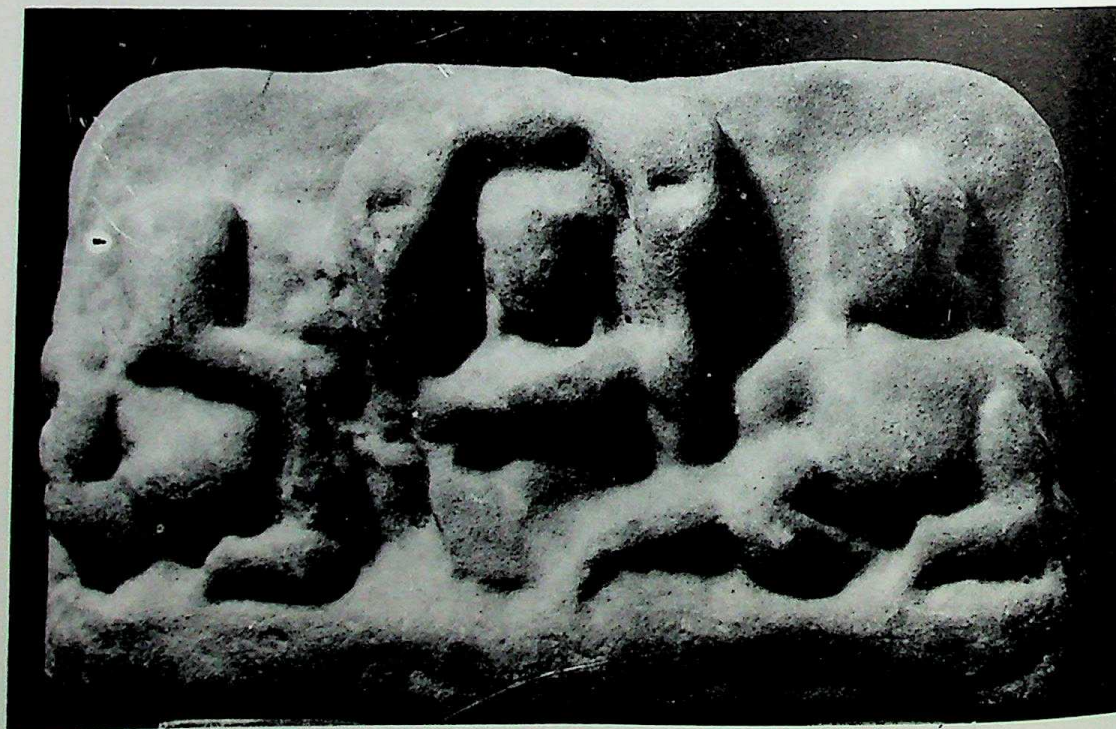


Fig. VI. Gaja-Lakshmi with Gaṇeśa and Kuvera, Mathura



Fig. 1. Terracotta seal impression showing a masted ship with flying banner. Chandraketurgh, C. 3rd Century A.D.



Fig. 2. Terracotta seal impression of a ship with basketful grains. Chandraketurgh, C. 3rd Century A.D.

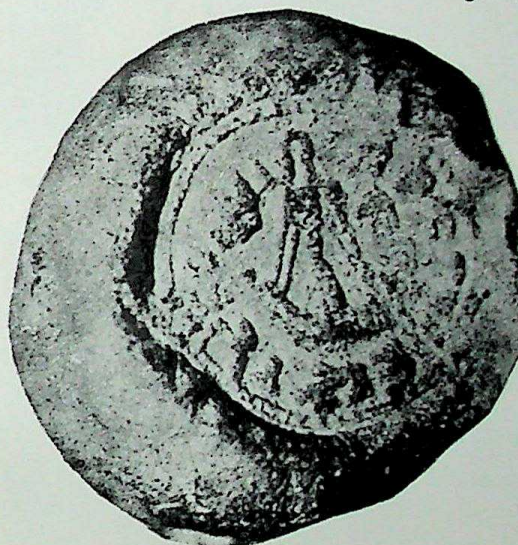


Fig. 3. Terracotta seal with masted ship. Chandraketurgh, C. 3rd Century A.D.

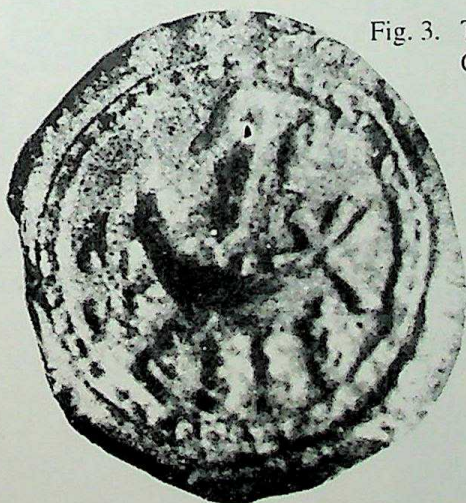


Fig. 4. Terracotta seal with masted ship and conch symbol, Chandraketurgh, C. 2nd Century A.D.

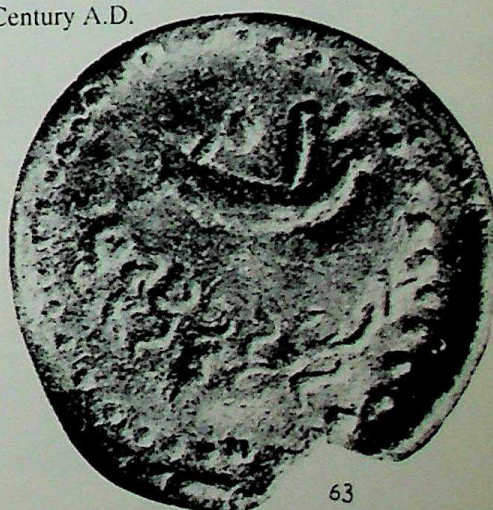


Fig. 5. Terracotta seal showing a boat with mast, Chandraketurgh, C. 2nd Century A.D.

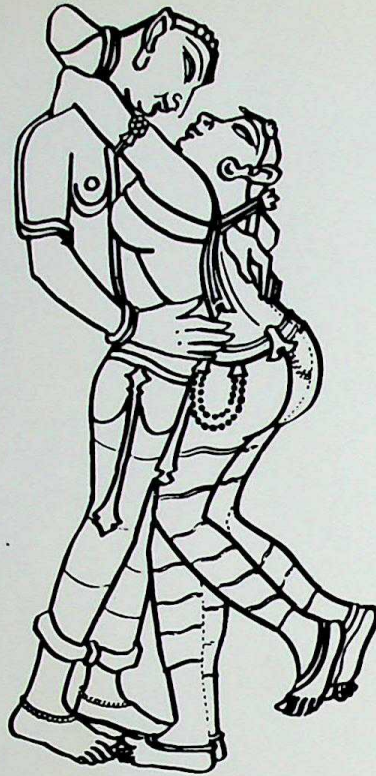


PLATE I. Jugate figures with male standing erect.

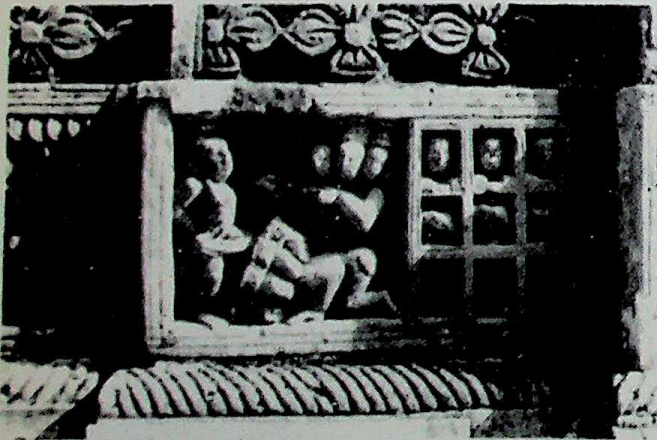


PLATE II. Brahma kneeling down to Krishna. Krishnapura Temple, 18th Century A.D.

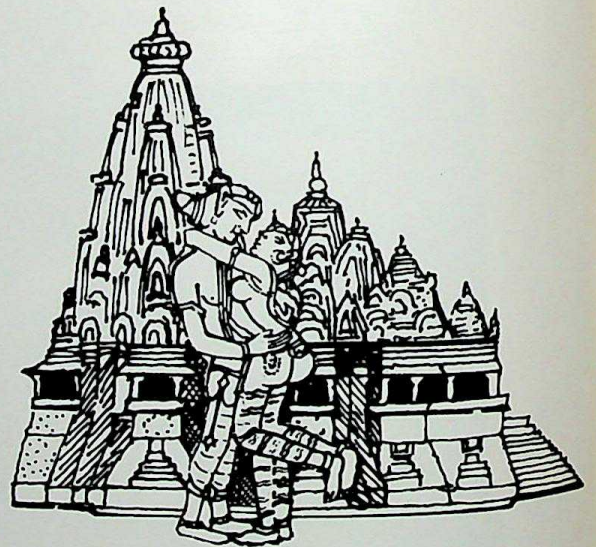


PLATE III. A comparative view of the temple complex of Kandariya Mahadeva and Jugate figures.

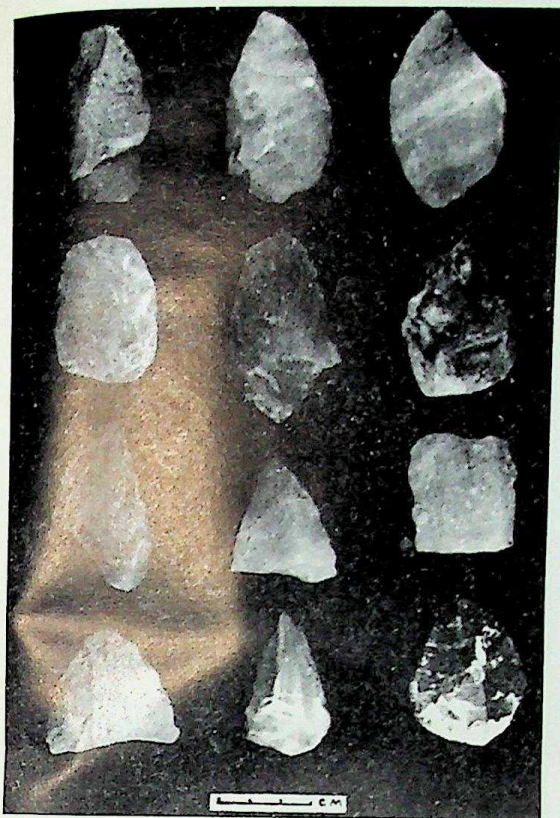


PLATE I. Upper paleolithic tools, Kattara, W.B.

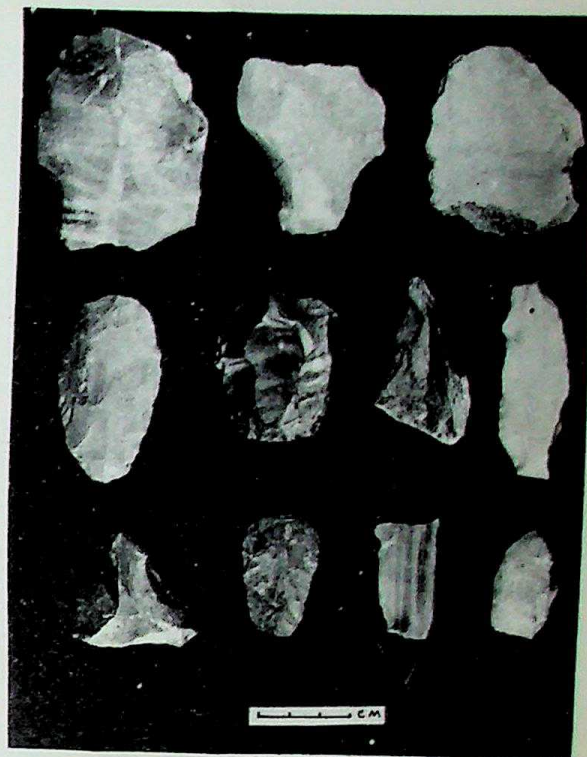


PLATE II. Upper paleolithic tools, Kattara, W.B.

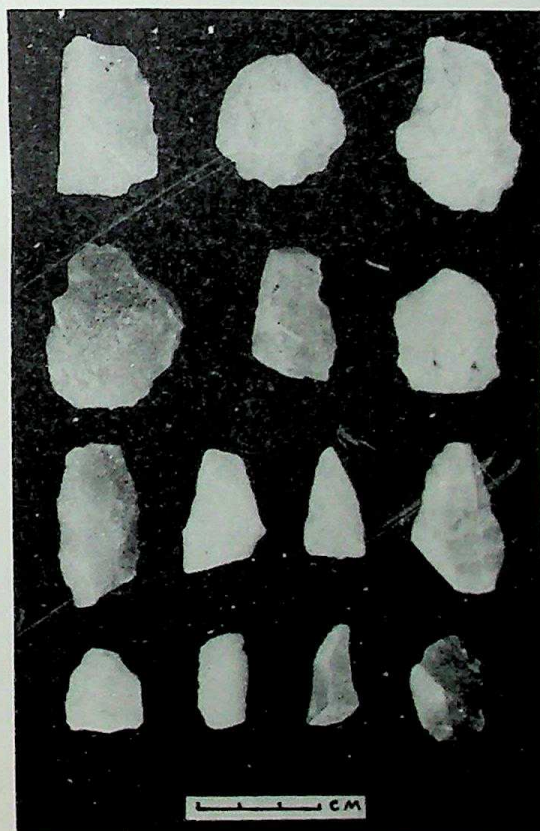
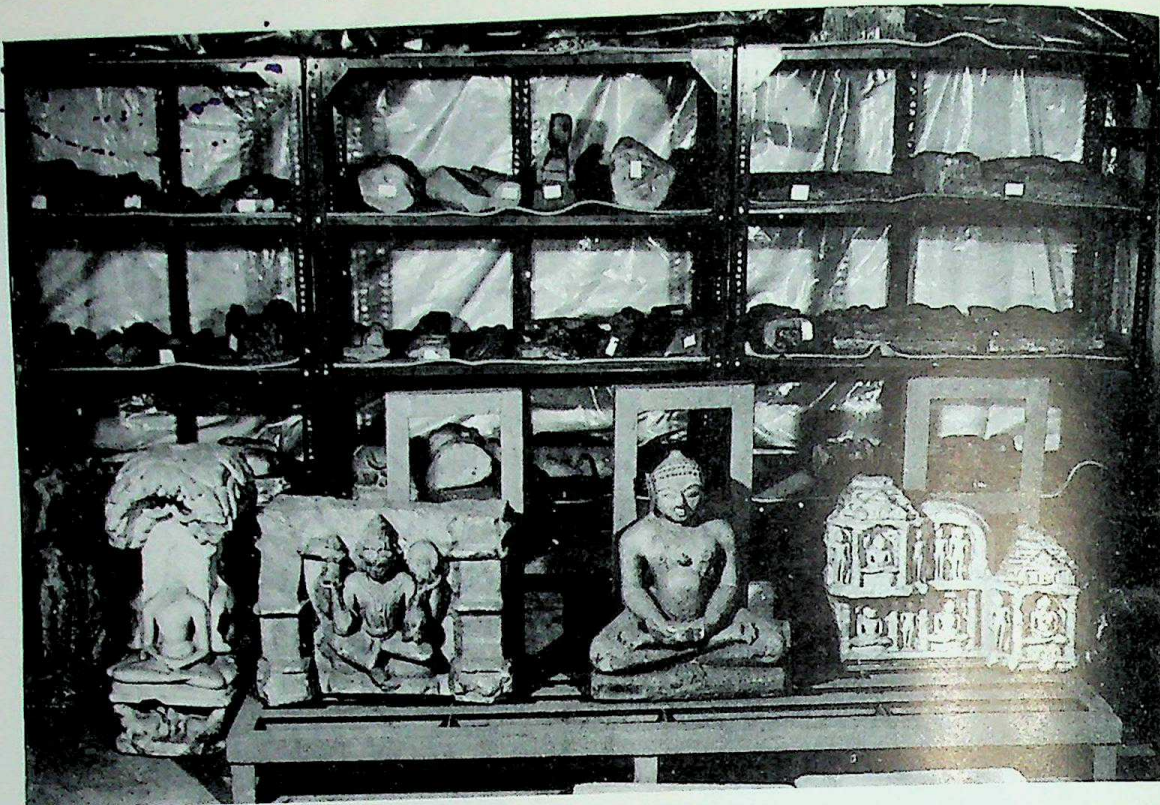


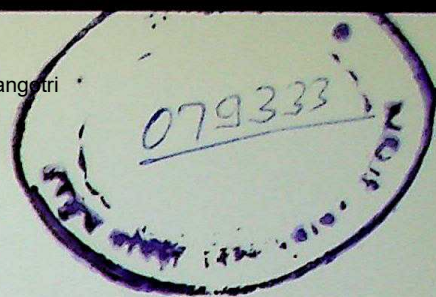
PLATE III. Excavated upper paleolithic tools, Kattara, W.B.



View of a reorganised reserve collection in Room No. 1



View of the reorganised sculptures of Vishnu images in Room No. 2



A section of the classified reserve collections showing Buddha statues in Room No. 3

